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United States
Department of Defense



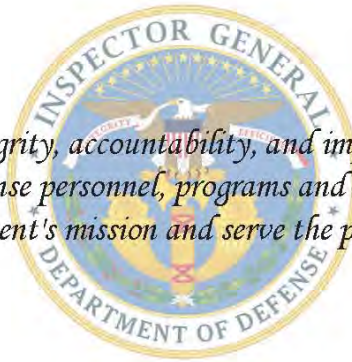
Review of Electrocution Deaths in Iraq:
Part I - Electrocution of
Staff Sergeant Ryan D. Maseth, U.S. Army

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INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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JUL 24 2009

MEMORANDUM FOR DEPUTY UNDER SECRETARY OF DEFENSE FOR ACQUISITION
AND TECHNOLOGY

COMMANDER, U.S. CENTRAL COMMAND
COMMANDER, MULTI-NATIONAL FORCES – IRAQ
COMMANDER, ARMY SUSTAINMENT COMMAND
DIRECTOR, DEFENSE CONTRACT MANAGEMENT AGENCY
ARMY ASSISTANT CHIEF OF STAFF FOR INSTALLATION
MANAGEMENT

SUBJECT: Review of Electrocution Deaths in Iraq: Part I – Electrocution of Staff Sergeant
Ryan D. Maseth, U.S. Army (Report No. IE-2009-006)


We are providing this final report for review and comment. We considered management comments to a draft of this report in preparing this final report.

We requested and received management comments from the Commander, U.S. Central Command; Commander, Multi National Forces – Iraq; Commander, Multi National Corps – Iraq; Director, Joint Staff; U.S. Army Assistant Chief of Staff for Installation Management; and the Director, Defense Contract Management Agency. We also received management comments from the Commander, Army Materiel Command, and the Commander, U.S. Army Criminal Investigation Command. All comments conformed to the requirements of DoD Directive 7650.3, "Follow-up on General Accounting Office (GAO), DoD Inspector General (DoD IG), and Internal Audit Reports," June 3, 2004.

As a result of management comments, we made changes to recommendations A.1.2, A.4, and B.4. The Commander, Multi National Corps – Iraq, disagreed with recommendation A.1.2. We request that the Commander, Multi National Corps – Iraq, reconsider his position and provide additional comments to this final report. A response by August 15, 2009, would be appreciated.

Please provide comments that conform to the requirements of DoD Directive 7650.3. If possible, send your comments in electronic format (Adobe Acrobat file only) to crystal.focus@dodig.mil. Copies of your comments must have the actual signature of the authorizing official for your organization. We are unable to accept the / Signed / symbol in place of the actual signature. If you arrange to send classified comments electronically, you must send them over the SECRET Internet Protocol Router Network (SIPRNET).

We appreciate the courtesies extended to our staff. Please direct questions to me at (703) 602-1017 (DSN 664-1017)


Charles W. Beardall
Deputy Inspector General
for Policy and Oversight

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Results in Brief: Review of Electrocution Deaths in Iraq: Part I – Electrocution of Staff Sergeant Ryan D. Maseth, U.S. Army

What We Did

This project was undertaken to examine underlying causes of the January 2008 death of Staff Sergeant (SSG) Ryan Maseth, who was electrocuted while showering in his quarters at the Radwaniyah Palace Complex (RPC), Iraq. The Army investigation determined that SSG Maseth was electrocuted while showering when he came in contact with water pipes that had been energized when an ungrounded water pump failed. Equipment and building maintenance at the time was performed under the Logistics Civil Augmentation Program (LOGCAP) III contract with Kellogg, Brown, and Root (KBR). Our review focused on management decisions, contracting procedures, and criteria for and execution of facility inspections and maintenance preceding the incident. See Appendix A for project initiation documentation.

Based on our preliminary work and congressional interest, we expanded the scope of our review to include an examination of 17 other electrocutions in Iraq involving U.S. military or contractor personnel associated with Operation Iraqi Freedom since the start of operations in March 2003 (Appendix B). The results of that review are in a separate report.

What We Found

With respect to the death of SSG Maseth, multiple systems and organizations failed, leaving him and other U.S. Service members exposed to unacceptable risk of injury or death.

- Special Operations Task Force Commanders with responsibility for RPC did not ensure initial renovations to Legion Security Forces buildings were performed properly. Few additional capital improvements--such as rewiring of existing facilities used by U.S. personnel--were undertaken.
- Commanders and other key decision makers at RPC were not informed, as part of the facility maintenance process, of facility deficiencies impacting life, health, and safety, or of their repair.
- Service members who received electrical shocks or were aware of electrical shocks did not always report the incidents.
- Joint doctrine, Army regulations, and U.S. Central Command policy for construction and facility operations did not specifically address the unique maintenance requirements posed by extended U.S. use of host nation-constructed permanent facilities.
- Army Sustainment Command did not include in the LOGCAP III statement of work:

- explicit electrical standards for performance of operations and maintenance work, or
- minimum requirements for contractor electrical workforce training and certification.
- Army Sustainment Command actions during contract negotiations transferring RPC facility operations and maintenance to LOGCAP III resulted in incomplete knowledge of facility conditions and assumption of undetermined risk by the Government.
- KBR did not ground equipment during installation or report improperly grounded equipment identified during routine maintenance at the RPC beginning in February 2006, perpetuating electrical hazards. Specifically, the pump that failed leading to SSG Maseth's electrocution was not grounded during installation. Regardless of the applicable electrical code, safe and proper installation required grounding.
- KBR did not have standard operating procedures for the technical inspection of facilities.
- KBR did not bring inconsistent contract specifications to the attention of the Administrative Contracting Officer as required by contract.
- KBR personnel at RPC had inadequate electrical training and expertise.
- Operations and maintenance contractor facility maintenance records were incomplete and lacked specificity, precluding the identification and correction of systemic maintenance problems.

During our review, the U.S. Army Criminal Investigation Command reopened its investigation into SSG Maseth's death. That investigation was ongoing as of June 2009.

What Has Been Accomplished

In January 2008, Special Operations Task Force Commanders with responsibility for RPC ordered facility life, health, and safety inspections of all facilities inhabited by forces under their command. They initiated repair and upgrades to the building where SSG Maseth was electrocuted, and construction of a living support area for 300 personnel residing within the RPC.

The Commander, Multi National Corps – Iraq, with assistance from the Army Combat Readiness Center, ordered an Iraq-wide safety review. The Commander, Multi National Forces – Iraq, acted on the results and established Task Force for Safety Actions for Fire and Electricity (TF SAFE). The Commander, Multi National Forces – Iraq, ordered subordinate commands to reenergize safety programs and develop essential knowledge of facilities inhabited by coalition forces, including health and welfare inspections of all facilities. The Commander further ordered adoption and implementation of a baseline electrical code Iraq-wide. TF SAFE provided technical expertise and validated contractor and command inspections, and oversight of repairs.

Starting in February 2008, at the direction of DCMA, KBR initiated the inspection of over 75,000 structures throughout Iraq and was making life, health, and safety repairs. DCMA reported that as of March 19, 2009, TF SAFE accepted 22,000 structures as safe, 14,000 awaited re-inspection, and 53,000 needed additional repairs or upgrades. KBR also updated procedures

for technical inspections, addressing life, health, and safety impacts and highlighting facility electrical system grounding and bonding. According to Multi-National Forces – Iraq, KBR is on schedule to finish the facility inspections by September 2009.

Army Sustainment Command made two significant and relevant changes to the LOGCAP III contract:

- On July 21, 2008, it added a contract clause “Personnel Certifications and Qualifications,” specifying minimum professional competency requirements for trade workers.
- On December 18, 2008, it published a contract letter modification specifying electrical standards for the U.S. Central Command area of responsibility. The modification was revised and reissued on March 2, 2009.

Defense Contract Management Agency (DCMA) commanders supported the above mentioned efforts. The Commander, DCMA – Iraq/Afghanistan, directed KBR to implement a systematic facility numbering system and conduct technical inspections of all facilities receiving services under the LOGCAP III contract. On September 11, 2008, the Commander, DCMA – International, issued a Level III corrective action request detailing KBR failure to identify and correct systemic grounding and bonding, and program-wide quality control deficiencies.

What We Recommend

The following recommendations relate to our process review of the circumstances surrounding the electrocution of SSG Maseth.

- The Commander, Multi-National Forces – Iraq, should institutionalize the Task Force for Safety Actions for Fire and Electricity awareness campaign to ensure retention of lessons learned during unit and troop rotation.
- The Commander, Multi-National Corps – Iraq should:
 - modify the facility deficiencies reporting system to ensure mayors’ cells provide commanders routine notification of identification and repair of facility deficiencies impacting life, health, and safety.
 - direct subordinate commanders receiving contractor logistical support to assign trained contracting officer representatives as coordinated with the Commander, DCMA – Iraq.
 - establish training requirements for base camp mayors and mayor’s cell personnel¹ that, as a minimum, address facility life, health, and safety deficiency reporting and repair, and basic contractor oversight.
- The Director, Joint Staff; the Commander, U.S. Central Command; and the Army Chief of Engineers should revise operations, construction, and facility management policy to

¹ As described in greater detail in the Introduction section, the RPC and similar base camps had an office known as a “mayor’s cell” that handled facility maintenance issues.

establish facility maintenance standards for extended use of host nation-constructed facilities in the theater of operations.

- The Director, Defense Contracting Management Agency, should provide additional contingency contract-related life, health, and safety deficiency identification training for all quality assurance specialists prior to deployment to Iraq.

Client Comments and Our Response

We requested and received management comments from the Commander, U.S. Central Command; Commander, Multi National Forces – Iraq; Commander, Multi National Corps – Iraq; Director, Joint Staff; U.S. Army Assistant Chief of Staff for Installation Management; and the Director, Defense Contract Management Agency.

We incorporated management suggestions into this final report. In response to management comments, we modified recommendations A.1.2, A.4, and B.4.

Please see the recommendations table below.

Recommendations Table

Client	No Additional Comments Required	Additional Comments Required
Commander, U.S. Central Command	A.4	
Commander, Multi-National Forces – Iraq	A.1.1	
Commander, Multi-National Corps – Iraq	A.3.1, A.3.2	A.1.2
Director, Joint Staff	A.4	
Army Assistant Chief of Staff for Installations Management	A.4	
Director, Defense Contracting Management Agency	B.4	

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Introduction

We initiated this project in response to a February 26, 2008, request from the Deputy Under Secretary of Defense for Acquisition and Technology, which was based on an inquiry from Representative Jason Altmire to the Secretary of Defense concerning the death of SSG Ryan D. Maseth, U.S. Army, in Iraq.² SSG Maseth was electrocuted on January 2, 2008, while showering in his quarters at the Radwaniyah Palace Complex (RPC) in Baghdad.³ In his letter to the Secretary of Defense dated February 19, 2008, Representative Altmire stated that Defense contracting officials were aware of electrical hazards posed by the shower facility used by SSG Maseth, but failed to direct the facility maintenance contractor to correct them. Accordingly, this office was asked to investigate “contracting matters related to the cause of this incident” (Appendix A).

Objectives

Based on that request and our initial review of the matter, we sought to review the relevant management, contracting, and maintenance actions prior and subsequent to the electrocution of SSG Maseth. Specifically, we reviewed:

- command and Government contracting management decisions concerning facility maintenance preceding the incident;
- procedures for facility support to the RPC; and
- criteria for and execution of facility inspections and maintenance.

Based on our preliminary work and congressional interest, we expanded the scope of our review to include an examination of 17 other electrocutions in Iraq involving U.S. military or contractor personnel associated with Operation Iraqi Freedom since the start of operations in March 2003 (Appendix B). The results of that review are provided in a separate report.

Methodology

We conducted this review from May 2008 through March 2009 in accordance with the standards established by the President’s Council on Integrity and Efficiency (now the Council of the Inspectors General on Integrity and Efficiency) published in the *Quality Standards for Inspections*, January 2005. We conducted fieldwork in Iraq in October and November 2008.

² In addition, Senator Robert Casey, Senator Byron Dorgan, and Representative Henry Waxman each requested DoD examine the electrocutions of U.S. personnel in Iraq.

³ SSG Maseth was electrocuted as a result of improper grounding. For this report, we used the definition of equipment grounding contained in U.S. Army Technical Manual 5-683, “Facilities Engineering Electrical Interior Facilities.” The manual states, “An equipment ground pertains to the interconnection and connection to earth of all normally non-current carrying metal parts. This is done so that metal parts with which a person might come into contact are always at or near zero volts with respect to ground thereby protecting personnel from electric shock hazards.”

The evidence obtained provides a reasonable basis for our observations and conclusions in concert with the review objectives.

In accomplishing this review, we examined documents consisting of over 12,000 pages provided to Congress at the request of the House Oversight and Government Reform Committee, approximately 15,000 pages from the U.S. Army Corps of Engineers, and over 26,000 pages supplied by KBR in response to a subpoena. These included contracting, maintenance, oversight, and briefing documents, and in some cases multiple copies of the same document. We created a searchable database containing over 22,500 pages. Each page was sequentially and uniquely numbered for identification and retrieval. We queried the database to identify documents relevant or potentially relevant to the objectives, assist during interviews, identify issues, and verify or refute issues in question.

We conducted over 60 interviews; taking sworn testimony from 35 individuals, including 14 Service members who were stationed at RPC, 10 officers and civilians from the organizations responsible for the operations and maintenance contract at RPC, and 11 representatives from the operations and maintenance contractor. The team interviewed five additional personnel with technical expertise to obtain in-depth information on electrical and plumbing codes and industry standards and practices.

We conducted a site visit to Iraq in October and November 2008, viewing the RPC and observing the site of the electrocution in LSF-1.

We met with KBR officials on two occasions to obtain information concerning their ongoing review of electrical maintenance issues in Iraq and question their handling of electrical work under the scope of existing contracts.

Background

The Electrocution of Staff Sergeant Ryan Maseth

At about 8:30 p.m. on January 2, 2008, fellow Special Forces soldiers found SSG Ryan Maseth unresponsive on the floor in his bathroom at the Legion Security Forces Building No. 1 (LSF-1), RPC, Baghdad, Iraq (Figure 1). He was found partially in the shower with the water still running.⁴ According to witness statements, a soldier received a strong electric shock when his clothed arm brushed a water pipe during initial incident response. A soldier from the unit, trained as an electronics technician and not part of the group attempting to resuscitate SSG Maseth, tested the water on the floor of the room and found strong voltage present. Realizing the system was energized and still dangerous, he cut the power to the entire building by turning off the circuit breakers located in the LSF-1 circuit breaker box.



Figure 1. Legion Security Force Building 1.

Special Agents of the U.S. Army Criminal Investigation Command requested the contractor, Kellogg, Brown and Root (KBR), determine why the building pipes were energized. The KBR Chief of Services for RPC and an electrical foreman sequentially tested the water heaters and water pumps. They isolated the fault to the water pump on the roof.

An engineering evaluation of the failed pump determined that insulation on internal wires melted, causing a short to the metal pump housing. Failure to ground the pump and improper grounding of the building electrical system allowed the metal pump housing and water distribution pipes in the building to energize. The U.S. Army Criminal Investigation Command concluded that SSG Maseth received an electric shock through contact with the energized metal shower faucet and hose.

We determined that KBR installed the pump on the roof which contributed to the electrocution of SSG Maseth, as well as adjacent water tanks during the first week of June 2006 (Figure 2). We reached that determination based on KBR work order documents, interviews with four LSF-1 occupants and a KBR subcontracted plumber, and photographs of LSF-1. A soldier recalled placing a work order to replace the tanks on the roof because the old tanks were leaking,

⁴ In May 2008, a news article stated SSG Maseth's family was told, "...he had a small appliance with him in the shower." We could not corroborate that assertion. A review by the Army was unable to confirm that an Army official, in conversations with the family, inferred that a small appliance played a role in the electrocution. The Army investigation conducted at the time did not indicate that a small appliance was found at the scene.

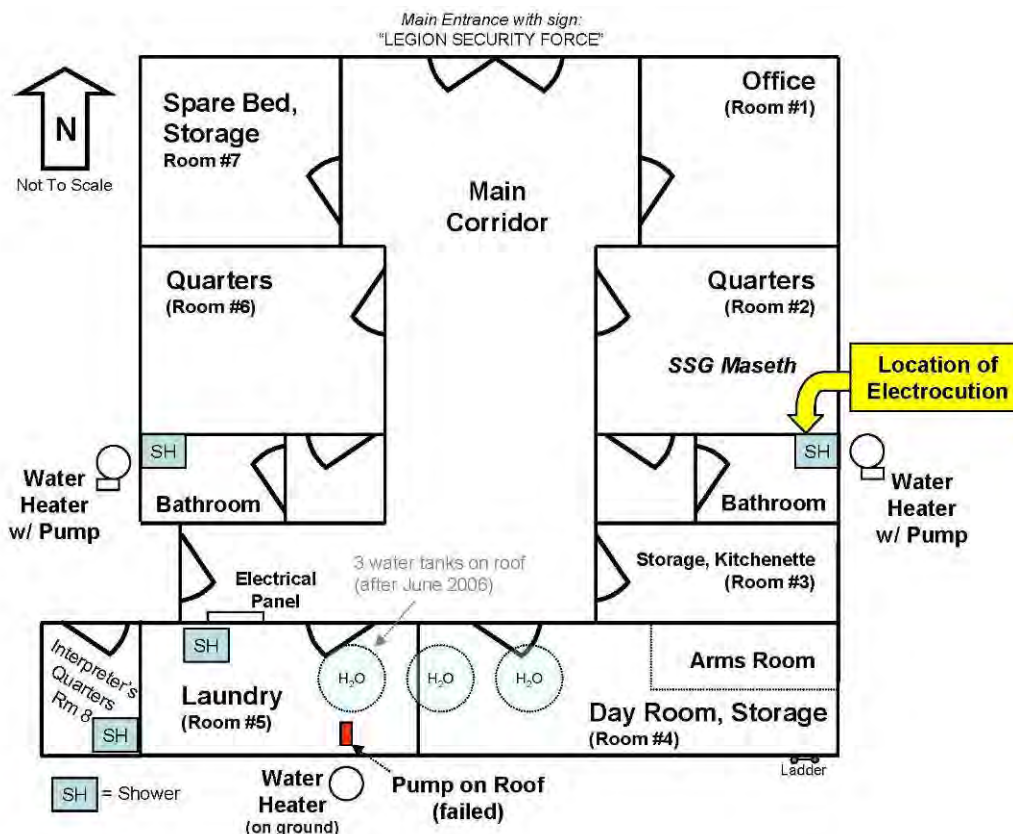


Figure 2. Floor Plan of Legion Security Force Building 1.

and a plumber from Card Industries (a subcontractor for the KBR Mid-East Region Office) recalled doing the work in early June 2006. The pump to fill those tanks would have been installed concurrently. Photographs of LSF-1 from before and after June 2006 are consistent with the believed installation date. A forensic engineering analysis of the failed pump conducted at the request of the U.S. Army Criminal Investigation Command found that the pump was installed without providing a separate ground conductor. Installation of the tanks and pump on the roof was only one of many repairs made to the plumbing and electrical system of LSF-1 prior to January 2008 (Appendix C).

Special Operations Forces Command Structure at the RPC

On January 2, 2008, SSG Maseth was a member of Headquarters and Support Company, 1st Battalion, 5th Special Forces Group. He was working as a U.S. advisor to an approximately 100-man Iraqi perimeter security force called the Legion Security Force. He lived in the Legion Security Force advisor building, known as LSF-1, within the security forces compound.

Headquarters and Support Company performed administrative functions for its parent organization, Special Operations Task Force – Central. Special Operations Task Force – Central was a battalion-sized organization headquartered on RPC. In addition to the Headquarters and Support Company, organic units included numerous operational detachments located throughout central Iraq. The Special Operations Task Force – Central was commanded by a U.S. Army lieutenant colonel.

The parent organization of the Special Operations Task Force – Central was the Combined Joint Special Operations Task Force – Arabian Peninsula. Combined Joint Special Operations Task Force - Arabian Peninsula was commanded by a U.S. Army colonel and headquartered at Logistic Support Activity Anaconda – about 15 miles from the RPC. The Commander, Combined Joint Special Operations Task Force - Arabian Peninsula, had control over most U.S. Special Operations Forces in Iraq and reported to both the forward element of the U.S. Central Command's Special Operations Command – Central, and Commander, Multi National Force – Iraq (MNF-I).

U.S. Forces Garrison of the RPC

Though the boundaries of the RPC and its various tenants changed over time, elements of Combined Joint Special Operations Task Force - Arabian Peninsula had inhabited RPC continuously since April 2003. The U.S. Army 5th and 10th Special Forces Groups alternated deployments, providing manning for the Special Operations Task Force – Central. Deployments routinely lasted seven months, and according to a former Special Operations Task Force Commander, the Task Force's focus was on missions that occurred away from the RPC. Multi-year use, rapid unit rotation, and secondary importance to the command added to wear and tear on Iraqi constructed facilities. Two Special Operations soldiers who experienced multiple deployments to RPC between 2004 and 2008 stated that conditions did not improve over time.

LSF and RPC Layout

As shown in Figure 3, LSF-1 was part of the Legion Security Force compound, a cluster of about a dozen buildings at one of the gates to the RPC. In January 2008, SSG Maseth and another U.S. Army Special Forces soldier responsible for training and administration of the Legion Security Force lived in LSF-1.

We could not determine exactly when the Iraqis constructed the building now known as LSF-1. According to testimony from several individuals who were at the RPC shortly after the initial invasion, LSF-1 had been completely gutted. Most of the doors, windows, light fixtures, plumbing, electrical panels, outlets, and switches had been looted. Evidence supports the conclusion that the original wiring of the building remained, as it was embedded in the masonry walls of the structure. Later analysis showed that most of the circuits in this embedded wiring lacked a third conductor and thus did not have the capacity for proper grounding.



Figure 3. Legion Security Force Compound on the RPC.

In December 2003, the Combined Joint Special Operations Task Force-Arabian Peninsula engineer officer developed a scope of work for a contract to create an entry control point and living and working areas for the Iraqi Legion Security Force. The work included a new gate, a new tower, and renovation of the gutted existing buildings, including LSF-1. We were unable to determine exactly which contractor was awarded the work, but testimony suggests it was a local Iraqi contractor. The project was completed on May 1, 2004. The first U.S. Service member moved into the building shortly thereafter, and lived and worked there from May to September 2004.

The RPC was constructed during the Saddam era and consisted of over 170 structures including a main palace. Located southwest of the Baghdad airport runway, the RPC was one of 12 camps or districts that comprised Victory Base Complex in January 2008 (Figure 4.)



Figure 4. Victory Base Complex.

Role of the Victory Base Complex Garrison

The Victory Base Complex garrison commander was located at Camp Victory and reported to the Multi National Corps – Iraq (MNC-I) Chief of Staff. The garrison commander, among other duties, was responsible for real estate management and infrastructure maintenance for the 12 camps that comprised the Victory Base Complex. Each camp had a mayor's cell to work day-to-day facility issues. In general, mayors' cells represented the unit in the facilities operations and maintenance process. They were staffed by representatives from the deployed unit and were the military commander's representative for coordination with the contractor (Kellogg, Brown, and Root – KBR) and contract administrator (Defense Contract Management Agency – DCMA).

In 2008, only 5 of the 12 mayors' cells in the Victory Base Complex were under direct command and control of the garrison commander. The RPC mayor's cell was not one of the five, but interacted with the garrison staff on an ad hoc basis as explained above.

RPC Operations and Maintenance Contracting

After initial hostilities ceased, the military command throughout Iraq began to contract for logistical support and services, including operations and maintenance. DoD defines operations and maintenance as the maintenance and repair of real property, operation of utilities, and provision of other services such as refuse collection and disposal, entomology, etc.

Starting in November 2003, Washington Group International/Black and Veatch provided RPC operations and maintenance support under a contract awarded and administered by the U.S. Army Corps of Engineers. In February 2006 the KBR - Middle East Region Office replaced Washington Group International/Black and Veatch as the operations and maintenance contractor. The contract remained in force until February 2007. The pump that failed and led to SSG Maseth's electrocution was installed under this U.S. Army Corps of Engineers contract.

In February 2007, the Commander, MNC-I, decided to include all operations and maintenance for the RPC under LOGCAP III⁵, administered by DCMA. Figure 5 summarizes the changes of contractor and contract administration for operations and maintenance at the RPC.

Date	May 03	Nov 03	May 04	Nov 04	Jul 05	Jan 06	Jul 06	Apr 07	Oct 07	Apr 08
U.S. Special Forces Unit Present at RPC	5th Group	10th Group	5th Group	10th Group	5th Group	10th Group	5th Group	10th Group	5th Group	10th Group
Contract Administrator	U.S. Army Corps of Engineers							Defense Contract Management Agency		
Operations and Maintenance Contractor	Washington International/Black and Veatch					KBR - MERO		KBR - LOGCAP		

Figure 5. RPC Garrison and Operations and Maintenance Contracting Changes.

By direction of an administrative change letter dated February 23, 2007, KBR assumed responsibility under LOGCAP III Task Order 139 for operations and maintenance services on RPC facilities. KBR provided operations and maintenance services at RPC, including the Legion Security Forces structures, through January 2008 and continuing up to the date of this report.

LOGCAP III Contract Description

The U.S. Army Sustainment Command competitively awarded the LOGCAP III contract to KBR on December 14, 2001⁶. The contract resulted from an initiative by the United States Army to pre-plan during peacetime for the use of civilian contractors to perform selected services in wartime and other contingencies to augment U.S. Forces in support of DoD missions. It was an indefinite delivery/indefinite quantity service contract, with a performance period consisting of one base year and nine option years. At the time of the addition of RPC operations and maintenance in February 2007, the contract operated under its fifth option year.

⁵ LOGCAP was an Army effort planning for the use of civilian contractors during war and other contingencies. LOGCAP III denotes the specific contract in force at the time of the electrocution.

⁶ At the time of the award of the LOGCAP III contract, the U.S. Army Sustainment Command was called the U.S. Army Operations Support Command. On October 1, 2008, the U.S. Army Contracting Command was established and assumed procurement contracting officer responsibilities for the LOGCAP effort.

U.S. Army Sustainment Command awarded and funded individual task orders against the indefinite delivery/indefinite quantity contract to facilitate the provision of requisite services to specific areas of operation against specified requirements. Task Order 139 was in force at the time of the January 2008 electrocution. The task order specified theater transportation mission support, corps logistics service support, base camp services, accommodations and life support services, and selected Echelons Above Corps/Echelons Above Division Combat Support/Combat Service Support functions to MNF-I and MNC-I at various locations in Iraq.

In August 2006, U.S. Army Sustainment Command delegated contract management for Task Order 139 of the LOGCAP III contract to DCMA. The DCMA Iraq/Afghanistan office in Baghdad, Iraq, had responsibility for day to day management of the contract, issuing LOGCAP administrative contracting officer change letters and letters of technical direction to administer the contract. DCMA Iraq/Afghanistan also provided quality assurance and property management functions.

The LOGCAP Support Unit was an Army Sustainment Command unit headquartered at Ft. Belvoir, VA with elements forward deployed to Iraq. The unit complemented the DCMA team providing an interface to MNF-I and MNC-I for support requirements. Prior to January 2008, the supervisor for LOGCAP Support Officers was the Army Sustainment Command's Procuring Contracting Officer Forward / Deputy Program Director – Iraq [Army Procuring Contracting Officer Forward], a warranted procuring contracting officer. LOGCAP Support Officers co-located with DCMA at locations throughout Iraq were not typically trained acquisition personnel.

Level and Complexity of Effort

The amount of support services provided to U.S. Forces under the LOGCAP III contract was enormous in scope and volume. As shown in Figure 6, in January 2008, KBR, as the contractor for the LOGCAP III contract, impacted virtually every aspect of service and support provided to Service members. The effort supported over 150,000 U.S. personnel located in over 50 base camps in Iraq. KBR supported over 75,000 facilities, including over 4,800 Iraqi-constructed buildings on the modified statement of work.

LOGCAP Services	
BASE CAMP SUPPORT	LOGISTICS SUPPORT
Morale, Welfare, Recreation Ice Vector Control Dining Facility Support Fire Fighting Waste Removal Billeting Water Heating, Ventilation, Air Conditioning Operations and Maintenance Power Generation Laundry Latrines Showers Fuel Local Transportation	Class I - Food Class II - Individual Equipment / Tools Class III - Fuel / Petroleum Products Class IV - Construction Material Class V - Ammunition Storage Class IX - Repair Parts Organizational Maintenance Direct Maintenance Central Issue Facility Joint Distribution Center Ice Distribution Line Haul (Bulk Fuel, Flatbed) Mail Distribution Material Handling Equipment Vehicle Recovery Movement Control

Information from "AF Criteria Rating Definitional Changes," by the Commander, DCMA Iraq/Afghanistan
 Undated briefing, information as of 2007

Figure 6. Summary of Services Provided Under the LOGCAP Contract.

The level of support to U.S. Forces described above took place within an Iraqi infrastructure that in 2003 reflected decades of totalitarian rule, almost a decade of embargo by the West, and weeks of combat operations. From mid-2003 through January 2008, Iraq's infrastructure was further impacted by sabotage, continued hostile actions, and increased demands for support from U.S. Forces as they established semi-permanent bases.

LOGCAP III Maintenance Levels

The U.S. Army Sustainment Command LOGCAP Support Unit created the “A-B-C Level” approach to facility operations and maintenance in LOGCAP III Task Order 139. After input from forward operating bases, U.S. Army Sustainment Command, MNF-I, and MNC-I finalized contract language effective October 1, 2006 (Appendix E) and incorporated the change in Appendix F of LOGCAP III Task Order 139.

According to Task Order 139 Appendix F, the determination for the application of operations and maintenance to particular facilities was a joint effort between the mayor's cell and the contractor. Facility level prioritization was a command responsibility, assigned to the site mayor's cell. Appendix F defined the three maintenance levels.

Level A: Full Maintenance. The contractor shall provide maintenance on any items pertaining to these facilities that can be repaired (such as plumbing, electrical, HVAC, roofs, floors, windows, doors, walls and grounds around the facilities) and provide preventative maintenance (such as change out of filters, HVAC cleaning, etc). The Government will initiate a service request for all maintenance repairs. The contractor shall provide the Mayoral Cell with a yearly inspection and punch list for all facilities prioritized as Level A.

Level B: Limited Maintenance. Limited Maintenance does not include inspections, preventative maintenance and upgrades. The customer will initiate all facility repairs or replacement with a service request. Upon receipt of service request, the contractor shall conduct an assessment to determine feasibility of repair or replacement of existing items. If the assessment determines repair or replacement is warranted, the contractor shall repair or replace existing items only (items which currently exist in the facility and are within current funding streams). If the assessment exceeds the scope of repair or replacement; the contractor shall return the service request to the mayor's cell for disposition.

Level C: No Maintenance only spot repairs.

For the ten months prior to the SSG Maseth's electrocution, LSF-1 received maintenance at “Level B.” However, the level of maintenance was not a factor in events leading to the death of SSG Maseth, because none of the above levels of maintenance contemplated the type of “new work”⁷ needed to correct the lack of grounding and bonding⁸ in LSF-1 electrical systems. To completely correct that situation would have required rewiring the entire building; work which was outside the scope of operations and maintenance under LOGCAP III Task Order 139.

⁷ We use “new work” in this report as per LOGCAP Task Order 139, August 29, 2007, paragraph 1.2. “All increases, decreases or modifications to requirements specified in this SOW [statement of work] are at the direction of the ACO [administrative contracting officer] in coordination with the Procuring Contracting Officer (PCO).”

⁸ UFC 3-520-01, “UNIFIED FACILITIES CRITERIA (UFC),” June 10, 2002 defines bonding as “the electric interconnection of conductive parts to maintain a common electric potential...”

Building electrical system “...refurbishment, construction, alterations, and upgrades...” were considered “new work” and required additional approval and funding. In addition, in September 2008, DCMA identified over 230 incidents of electrical shock in Iraq that occurred in LOGCAP III supported buildings, the majority of which received maintenance at “Level A.”

Facility Operations and Maintenance and Improvement Process

Based on documents, contract language, and interviews with individuals who performed mayor’s cell duties, the following steps describe the facilities repair process at RPC.

- A building occupant would complete a service order⁹ requesting a repair and either hand deliver the request to the mayor’s cell or deposit it in a drop box.
- Mayor’s cell personnel reviewed the requests to determine if it qualified as a repair or replacement, or was considered “new work” according to the contract scope of work.
- Mayor’s cell personnel forwarded repair or replacement requests to the KBR site manager for a feasibility assessment.
- KBR performed the assessment, notified the mayor’s cell, assigned a priority, and received approval for repair or replacement work. Requests deemed beyond the scope of repair or replacements were referred back to the mayor’s cell for disposition.
- KBR completed the repair and a unit representative, often the building occupant, signed the service order signifying completion and acceptance.

Representatives from the mayor’s cell, tenant organizations, DCMA, the LOGCAP support office, and KBR attended weekly mayor’s cell meetings at RPC to discuss issues and problems. The RPC mayor or deputy mayor would also attend Victory Base Complex mayor’s cell meetings.

Requests outside the scope of the contract task order statement of work were considered “new work,” and required additional funding. The military commander initiated requirements for new work. Contracting officers reviewed requests for appropriateness, approved or disapproved, and directed the contractor to execute approved requests. At the RPC, requirements such as rewiring the electrical systems of buildings constituted “new work” and needed approval from MNC-I. The RPC mayor’s cell usually sought assistance from the Victory Base Complex garrison commander to obtain approval.

In January 2008, the RPC housed approximately 500 personnel, including U.S. Special Forces, National Guard, Government civilians, contractors, third-country national contractors supporting Operation Iraqi Freedom, and Iraqi soldiers. The personnel inhabited over 125 facilities to which

⁹ The name of the document requesting operations and maintenance support changed over time from a “work order” to a “service order request.”

KBR supplied operations and maintenance support. From February 2007 through January 2008, according to data provided by KBR, they responded to over 21,000 service order requests at the RPC alone. These service orders included over 5,000 requests classified as electrical or plumbing.

Other Incidents of Electrical Shocks

A review of service work order documentation indicated 20 reported cases of individuals receiving and reporting electrical shocks while washing or showering in Iraqi-constructed buildings throughout the RPC between March 20, 2004, and January 2, 2008. Four of the 20 incidents of electrical shock occurred at the LSF compound, including three at LSF-1. We were unable to determine where the fourth event occurred because the buildings were not systematically numbered.

Interviews with former LSF-1 occupants identified additional incidents of electrical shock that may have gone unreported. Former LSF-1 occupants stated that U.S. personnel first moved in to LSF-1 in May 2004, and the first electrical shock incident occurred in December 2005. Of the 19 former occupants contacted, eight stated they received electrical shocks on 16 different occasions prior to SSG Maseth's electrocution. The occupants stated they reported being shocked to their immediate chain of command on three occasions. Individuals shocked inhabited each of the four rooms that had showers and sinks in LSF-1. Appendix F details a list of known incidents of electrical shock and related work orders.

Not all LSF-1 occupants who said they were shocked submitted service order requests to remedy the hazard. Those that did submit a service order request responded that after the operations and maintenance contractor made the repair, the electrical shocks stopped. For example, in April or May 2006, the water heater outside the laundry room was replaced after two Service members were shocked. The contractor replaced the water heater and grounded it to a metal pipe. KBR-Middle East Region Office did the work, and we believe they used the same subcontractor – Card Industries – as Washington International, Inc., used earlier.

The soldier who preceded SSG Maseth in his room in LSF-1 testified that he was shocked several times (the exact number of incidents is unclear because the soldier provided different testimony to various questioners on several occasions). An incident of electrical shock that he reported in July 2007 was documented and resulted in KBR repairing/replacing a pressure switch and a water pump in LSF-1. We believe this repair was made to the pump located on the ground directly outside the Service member's room, not the pump on the roof that failed and caused the electrocution of SSG Maseth.

In the nine weeks following SSG Maseth's electrocution, there was a marked increase in personnel at the RPC reporting electrical shocks. We found service order requests for nine incidents from January through March 2008, and three of them were for LSF buildings.

The problem of individuals receiving electrical shocks was not limited to the RPC. In their corrective action request of September 11, 2008, DCMA searched the KBR Strategic Tactical

Enterprise Asset Management database and identified over 230 incidents of reported shocks in KBR-maintained facilities Iraq-wide from September 2006 through July 2008.

In September 2008, DCMA concluded that the cause of the majority of electrical shocks was the lack of grounding and bonding in conformance with electrical standards. Unified Facilities Criteria¹⁰ 3-520-01, “Interior Electrical Systems,” June 10, 2002, defines grounding as “...the process of establishing a ... system in which one of the elements is purposely connected to ground,” and bonding as the “...electric interconnection of conductive parts to maintain a common electric potential.” Properly grounded systems protect equipment from static charges, personnel from electric shock hazards, and equipment and facilities from fire.

The original electrical systems in U.S. inhabited Iraqi-built facilities were loosely based on British electrical standards, and facility power used 220 volt service. U.S. personnel and U.S. trained electricians were familiar with U.S. National Electric Code standards organized around a 110 volt power grid. Both standards specify grounding and bonding requirements that were not generally employed in Iraq prior to 2003.

¹⁰ “The Unified Facilities Criteria (UFC) system is prescribed by MIL-STD [Military Standard] 3007 and provides planning, design, construction, sustainment, and modernization criteria, and applies to the Military Departments, the Defense Agencies, and the DoD Field Activities in accordance with USD(AT&L) [Under Secretary of Defense for Acquisitions, Technology, and Logistics] Memorandum dated 29 May 2002.”

Results

SSG Maseth's death was the catastrophic result of the failure of multiple systems exposing U.S. personnel to unnecessary risk. Specifically, individuals and responsible officials underestimated the risk associated with continued, long-term use of ungrounded electrical systems in Iraqi-constructed facilities.

There were three groups responsible for the use and/or physical condition of LSF-1 at the time of the electrocution:

- A. The military command - MNF-I, MNC-I, Garrison Command, and Special Operations Commands.
- B. The contracting community - the U.S. Army Corps of Engineers, Army Sustainment Command (later Army Contracting Command), and DCMA.
- C. The operations and maintenance contractors - Washington Group International/Black & Veatch and KBR.

The next three sections of this report discuss the conditions that contributed to SSG Maseth's electrocution in January 2008 by responsible group as defined above. A summary of corrective actions taken by responsible individuals or organizations follows each identified condition. While corrective actions taken reflect an aggressive effort to address electrical safety, they also illustrate the longstanding systemic weaknesses that existed in Iraq at the time of SSG Maseth's death. The discussion of corrective actions is followed by our recommendations for additional steps to reduce the risk to deployed forces.

The final section presents our conclusions with respect to accountability for the underlying causes of SSG Maseth's electrocution.

A. The Military Command

Army Regulation 600-20, “Army Command Policy,” June 7, 2006, stated “Commanders are responsible for everything their command does or fails to do. ... Commanders who assign responsibility and authority to their subordinates still retain the overall responsibility for the actions of their commands.”¹¹ Commander’s responsibility included the safety and living conditions of their troops. We identified four areas of systemic weakness relevant to SSG Maseth’s electrocution under the control of the military command.

Issue A1: Awareness and Risk Assessment of Electrical Hazards

Service members who received electrical shocks or who were aware of electrical shocks considered the incidents minor inconveniences and did not recognize the significant risk. Misunderstanding the risk caused Service members who did report electrical shocks, and individuals responsible for operations and maintenance systems, to consider repair requests routine. This further resulted in general command unawareness of the threat posed by ungrounded electrical systems.

Service members inhabiting the facilities realized building electrical systems had problems, but considered occasional shocks as just another inconvenience associated with duty in Iraq. For example, SSG Maseth’s predecessor testified that during the unit overlap, he advised SSG Maseth of the electrical shocks, but described them as “pretty minor.” Individuals failing to report electrical shocks and discounting their severity partially explains why senior commanders remained unaware of the risk to their troops. Because building occupants initiated service requests, facility deficiencies that were not reported were not fixed.

Even when Service members reported shocks to the mayor’s cell, the facility maintenance process had no mechanism to ensure commanders were informed. Interviews with personnel of all ranks up to colonel identified a similar pattern of actions subsequent to an incident of electric shock. If individuals chose to take action, they would submit a service order request to the base camp mayor’s cell, who would submit the request to the contractor for repair. The facility maintenance and repair process required the attention of commanders and senior officers only by exception. If the contractor offered a timely response and appeared to remedy the problem, commanders were not routinely informed.

We found that on three occasions individuals who were shocked stated they informed their first-line supervisor (normally a senior non-commissioned officer) and/or their commanding officer (normally an Army captain). Second and third level commanders we interviewed stated they had never been shocked and had no knowledge of incidents of electrical shock incidents prior to SSG Maseth’s death in January 2008.

¹¹ The revised AR 600-20, March 18, 2008, further states that, “Command of Army installations is exercised by a Senior Commander (SC). The SC is designated by Senior Army leadership. The SC’s command authority over the installation derives from the Chief of Staff of the Army (CSA) and Secretary of the Army’s (SA) authority over installations. This is a direct delegation of command authority for the installation to the SC.”

Special Operations Task Force commanders and other key decision-makers at RPC were not informed of facility deficiencies impacting life, health, and safety, or of their repair. The RPC mayor's cell processed initial service order requests and tracked completion status. KBR maintained service order request details in their Strategic Tactical Enterprise Asset Management database. We found no indication that either group consolidated data highlighting facility issues concerning Service member's life, health, and safety. Appendix F to the Task Order 139 statement of work assigned emergency priority to repairs effecting life, safety, and force protection and required KBR to respond within two hours, but many facility electrical deficiencies were processed as normal requests.

In November 2008, in a memorandum to the MNF-I Commander, we identified the commander's lack of visibility of facility life, health, and safety deficiencies, and specific actions taken in response, as a weakness with the maintenance and repair process (Appendix D). The facility maintenance system should provide commanders and key decision-makers actionable information of facility life, health, and safety deficiencies so commanders are in a position to assess risk to their troops. Once the information is available, weekly mayor's cell meetings provide an existing method of dissemination.

Actions After January 2008

Military commanders stated they took several steps following SSG Maseth's electrocution. The Commander, Special Operations Task Force – Central, ordered his staff engineer, members of the Naval Construction Battalion, and contractors where available, to perform safety surveys, starting with RPC buildings in use and expanding to their out stations. The Commander, Combined Joint Special Operations Task Force – Arabian Peninsula, stated he expanded the safety inspection to his entire area of responsibility, using the same groups of technicians.

MNC-I Joint Planning Team

In early summer 2008, MNC-I formed a joint planning team to mitigate electrical dangers in U.S. inhabited facilities in Iraq. To achieve their purpose, the joint planning team's goals were to adopt a single Iraq-wide electrical standard and then identify, prioritize, and correct electrical deficiencies based on that standard. The joint planning team identified four key issues.

- “Largest single cause of troop electrocutions is unsafe troop actions.”
- “Single theater safety incident database does not exist.”
- “Multiple electrical codes currently used by coalition forces and contractors to govern construction, procurement, and maintenance requirements,” and a “Lack of sufficient trained personnel to perform electrical inspections and certifications.”
- “Assessment of the extent of electrical hazards associated with facilities and equipment ongoing across multiple agencies throughout the theater.”

The Commander, MNC–I, with assistance from the Army Combat Readiness Center, ordered an Iraq-wide safety review. The Army Combat Readiness Center team completed its assessment and reported its findings in mid-August 2008.

- Improper grounding and bonding, coupled with overloaded circuits and substandard equipment, raised the risk of electrical shock and fire.
- Standards for electrical use/fire safety generally do not exist.

From these findings, the Army Combat Readiness Center concluded that U.S. personnel in Iraq were at risk, and that the use of electrical and fire safety standards and certified equipment would reduce the risk to a moderate level.

Task Force Safety Action for Fire and Electricity (TF SAFE)

Completing the electrical assessments and repairs Iraq-wide was a large task. MNF-I established Task Force Safety Action for Fire and Electricity (TF SAFE) naming a major general assigned to the MNF-I staff as the director. TF SAFE incorporated the mission of the Joint Planning Team and expanded it to include fire safety:

TF SAFE will, through immediate and long term measures, significantly reduce the number of fire and electrical incidents throughout the theater in order to improve the safety of our Soldiers, Sailors, Airmen, Marines and Civilians.

TF SAFE established three primary lines of operation.

- “Plans, Policies and Procedures,” to set operational conditions. TF SAFE sought to establish a theater-wide baseline electrical code and implement trend analysis and feedback mechanisms for preventative measures.
- “Facilities,” to mitigate electrical safety hazards. TF SAFE expected to increase contractor capability and quality, require training and certification of contractor employees, hire additional certified electricians, and increase government oversight capability.
- “Awareness,” directed at addressing human factors. TF SAFE planned to conduct a multimedia safety campaign using the Armed Forces Network, base newspapers, and other frequently viewed media to enforce basic fire and electrical safety practices. They planned to improve situational awareness of coalition forces and extend awareness to reception/staging and pre-deployment training.

MNF-I Fragmentary Orders

MNF-I published two fragmentary orders¹² concerning the electrical safety program. TF SAFE leadership briefed the major tenets of the program at commander's conferences for MNF-I and MNC-I prior to publication of the fragmentary orders in August and September 2008.

On August 20, 2008, MNF-I published "MNF-I FRAGO [fragmentary order] 08-405, FIRE AND ELECTRICAL INCIDENT REPORTING." This order emphasized reenergizing safety programs and developing essential knowledge of the facilities inhabited by coalition forces. Among other tasks, MNF-I directed subordinate commands to:

- Conduct health and welfare inspections of facilities focusing on safety in terms of electrical and fire hazards and take action as necessary.
- Report all fire and electrical incidents to TF SAFE in addition to normal reporting through command and safety channels.
- Provide installation facility data for all facilities, including tents, containers, trailers, and generators on the modified Real Property Inventory Report by September 30, 2008.

The order also defined and described recordable accidents for reporting.

On September 27, 2008, MNF-I issued "MNF-I FRAGO [fragmentary order], 08-482, ADOPT AND IMPLEMENT BASELINE ELECTRICAL CODE IN ITO [Iraq Theater of Operations] AND INITIATE INSPECTION AND REPAIR PROGRAM." This order mandated the 2005 National Electric Code as the common electrical code for all "...construction, repair, maintenance, technical inspections and quality assurance..." and prohibited the sale of non-approved electrical devices. The order further directed a theater [Iraq]-wide electrical inspection and repair program for all facilities. This order expanded the inspection and repair program already underway in facilities in the scope of work for LOGCAP III to all U.S.-occupied facilities in Iraq.

The intention of the September 27, 2008, order was not to require complete rewiring of existing facilities, but to make facilities safe through bonding and grounding as required by their function, and identify life, health, and safety deficiencies. Local commanders were required to document deviations from the 2005 National Electric Code and forward the details of the deviation and actions taken to the Authority Having Jurisdiction and TF SAFE for approval.

TF SAFE Inspection Efforts

TF SAFE considered U.S.-occupied facilities in two groups. First, facilities supported by contractor operations and maintenance. The designated contractor conducted electrical and life, health, and safety inspections and made corrections on the spot if possible. Second, facilities not

¹² The DoD Dictionary of Military Terms defines a fragmentary order as, "An abbreviated form of an operation order issued as needed after an operation order to change or modify that order or to execute a branch or sequel to that order."

supported by an operations and maintenance contractor. TF SAFE set up two options for these facilities. A 20 person team from Inglett Stubbs, the commercial electric contractor hired to inspect and repair facilities at the estimated 250 contingency operating locations, inspected most of the locations. Military engineers (troop labor) would do the work at the remaining facilities.

TF SAFE employed Master Electrician certified technicians as quality assurance representatives to review the work of contractors and military engineers. Personnel from the U.S. Army Corps of Engineers, including soldiers from the 249th Engineer Battalion (Prime Power) and qualified civilians provided 23 electricians for the first 90 days to satisfy the immediate requirement. TF SAFE contracted with Stanley Baker Hill, LLC, for support over the following 365 days. Incoming inspectors were expected to attend a four and a half day training and testing period prior to beginning work in Iraq.

Continued Awareness and Reporting of Electrical Shocks

Even after publicity about SSG Maseth's death, Service members at RPC in at least one case failed to report problems causing electrical shocks. In one building, known as the Sniper Hut, KBR began repairs only after the Special Operations Task Force first sergeant happened to overhear a soldier discussing the electrical shock received in the shower of that building. The first sergeant contacted the senior occupant of the building who then confirmed the story and only then action was taken to repair the energized pipes. When we asked why Service members would fail to report this well-known risk, the first sergeant could only offer, "...[they didn't] think it was a serious problem ... only getting a little tingle." And, "...they didn't want to move...."

In October 2008, we conducted sensing sessions at six forward operating bases in Iraq to gauge the level of troop awareness concerning the dangers of electric shocks. Several military members told us that they delayed reporting shocks and provided their rationale for not doing so. A Service member at Al Assad indicated that he and others knew of a person shocked in July or August but did not report it right away. He stated that he knew it was bad, but just moved to another room. One Service member said he believed that people tended to focus their attention and energy on most immediate threats, e.g., the threat of being "blown up." He indicated that once those threats are reduced, people pay attention to hazards like electricity. Another Service member at RPC indicated that some soldiers like their billeting and might not want to give it up for [what they consider to be] minor problems.

TF SAFE leadership addressed the condition described above in their "awareness" line of operation. They noted that leadership must get engaged and must increase efforts to establish composite risk management to reduce risk severity and probability through increased awareness of hazards. Methods to correct the problem included safety tips on electrical safety in multiple media outlets, reinforcing a culture of safety and extending awareness campaign to pre-deployment and reception, staging, and onward movement training. During a sensing session at Al Asaad, one person stated that pre-deployment training was effective because it emphasized electrical safety.

To help commanders look out for the safety of their troops, Service members and mid-level leaders must be trained regarding electrical hazards and urged to report incidents of shocking or other electrical safety related conditions. Once these issues are raised, the reporting process should force command visibility of life, safety and health related problems. The commander must then ensure hazards to Service members are corrected quickly and permanently.

Recommendation, Management Comments, and Our Response

The Commander's comments to A.1.1 both recommendations were responsive.

A.1.1. The Commander, Multi-National Forces – Iraq institutionalize the Task Force for Safety Actions for Fire and Electricity awareness campaign to ensure retention of lessons learned during unit and troop rotation.

The Commander, MNF-I concurred with comment, stating the staff safety directorate maintains the awareness campaign, and that TF-SAFE briefs their roles and responsibilities to incoming mayors' cells, DCMA administrative contracting officers and quality assurance specialists.

We agree that the TF-SAFE effort was effective. TF-SAFE, however, is a one-time initiative. We want to ensure that awareness of electrical safety remains a priority when TF-SAFE completes its objectives.

A.1.2. The Commander, Multi-National Corps – Iraq modify the facility deficiencies reporting system to ensure mayors' cells provide commanders routine notification of identification and repair of facility deficiencies impacting life, health, and safety.

The Commander, MNC-I non-concurred with the recommendation, stating action was complete with issuance of MNC-I fragmentary orders 139, October 3, 2008, and 176, October 30, 2008. Task four of fragmentary order 139 directed leaders at all levels to "...put eyes on their work centers and the places where their troops live, eat, and recreate." Task four also required reporting of any fire or electrical safety incident to the TF-SAFE portal. Fragmentary order 176 stated "...all fire and electrical safety incidents, regardless of severity or accident class, are reportable and recordable. Order 176 also required contracted quality assurance representatives, after inspecting bases, to provide base commanders with "...detailed electrical assessments of facilities, repairs made, remaining deficiencies not deemed life/health/safety deficiencies, and recommend mitigation measures for the command to take."

As outlined in the report, the facilities reporting system is a constant process that starts with individual Service members and includes mayors' cells, contracting officials, and contractors. Satisfying the requirements of the fragmentary orders cited should improve command awareness of fire and electrical safety and response to reported mishaps. However, incidents of electric shock do not meet the thresholds for classification as "accidents" as defined in the fragmentary order. We modified our recommendation to specify the need for mayors' cells to notify their commanders of facility deficiencies impacting life, health, and safety.

Issue A2: Capital Improvements at the RPC

Special Operations Task Force Commanders with responsibility for RPC did not ensure initial renovations to LSF buildings were performed adequately. Few additional capital improvements--such as rewiring of existing facilities used by U.S. personnel--were undertaken. The overall conditions led two Special Operations soldiers who experienced multiple deployments to RPC between 2004 and 2008 to state during interviews that they believed facility conditions did not improve over time.

Beginning in December 2003, the Combined Joint Special Operations Task Force-Arabian Peninsula engineer staff renovated the existing buildings at the LSF compound to create living and working areas for the Iraqi Legion Security Force (see Appendix C for additional details.) The project included constructing a new entrance gate and a tower, renovating LSF-1 and other existing buildings, and “renovation of electrical, water and sewer lines.” Special Operations engineer staff indicated they provided oversight for several projects throughout RPC, and that it was very difficult to get Iraqi contractors to properly ground electrical systems.

DCMA summarized RPC contract administration actions for September 2006 through December 2007. They identified 11 administrative contracting officer change letters directing KBR action at RPC. Change letters indicate additional expenditure of funds outside the existing scope of work (operations and maintenance), including construction. Of the 11 change letters, five directed minor construction. The projects included modifications such as installing internal walls and doors in the headquarters building and the temporary holding facility, improvements to the fuel containment area, and installation of a trailer for the coffee shop. During their review, DCMA found no evidence suggesting significant capital improvements at RPC prior to SSG Maseth’s electrocution in January 2008.

In December 2007, DCMA noted that they direct approximately 2,800 administrative change letters and letters of technical direction to the LOGCAP III contract annually. Thus, the mechanism to gain approval and funding for capital improvements on LOGCAP managed facilities was available to the command.

In early 2006, KBR performed operations and maintenance at the RPC under contract W912ER-04-D-0005, administered by the U.S. Army Corps of Engineers. On February 4, 2007, the Commander, Combined Joint Special Operations Task Force – Arabian Peninsula requested LOGCAP support. The request was consistent with direction from MNC - I to consolidate operations and maintenance services under LOGCAP III. A February 4, 2007 memorandum from the Commander, Combined Joint Special Operations Task Force – Arabian Peninsula, the Administrative Contracting Officer’s price negotiation memorandum, and testimony by the Deputy Program Director for LOGCAP Operations supported the conclusion that the primary purpose for the consolidation was to reduce the cost of operations.

The senior non-commissioned officer with responsibility for the RPC during February 2007 testified he was primarily concerned with keeping things as they were and ensuring there was no drop in service. Decision makers involved in the process, including the MNC-I Comptroller, the Deputy Program Director for LOGCAP Operations, and an RPC mayor’s cell representative indicated they believed that LOGCAP III operations and maintenance service would be

equivalent to what they received under the prior contract. We found no evidence documenting discussions concerning the need for capital improvements during the change in operations and maintenance support at RPC.

Actions After January 2008

Following facility inspections, Special Operations Task Force Commanders initiated two major capital improvements to mitigate electrical hazards at the RPC.

Upgrades to LSF Buildings

Following the death of SSG Maseth, the military command took action to correct the electrical deficiencies at the LSF compound. In January 2008, the Victory Base Complex garrison commander requested LOGCAP III support to fix and repair electrical systems in three buildings at RPC that are a “clear and present danger.” The tasks centered on the building electrical wiring and included grounding, connections, internal fixtures, and other repairs to bring the “buildings to within recognized international electrical codes.”

On February 1, 2008, the LOGCAP III Support Officer directed KBR to prepare a project planning request to bring LSF-1, -5, and -6 into compliance with recognized international electrical codes. The memorandum provided KBR with 15 calendar days to provide their project planning estimate. On the same day, the DCMA Administrative Contracting Officer published the notice-to-proceed, providing funds and directing KBR to perform the work in LSF-1, -5, and -6.

RPC Living Support Area Construction and Population

Military commanders realized many RPC living quarters posed safety concerns and required extensive renovation to make them acceptable for billeting. Special Operations Task Force - Central, DCMA, and Victory Base Complex commanders planned to construct a living support area at RPC. On January 11, 2008, the Victory Base Complex garrison commander requested LOGCAP III support for a living support area including containerized housing units to accommodate approximately 300 personnel.

On March 20, 2008, KBR provided the Commander, DCMA Iraq/Afghanistan, with a letter stating that six buildings were “uninhabitable for safety and health reasons,” and that KBR would not perform operations and maintenance on the buildings after March 23, 2008. According to the Commander, DCMA Iraq/Afghanistan, KBR initiated the inspection and provided the results at his direction.

The list of buildings at RPC that KBR declared unsafe eventually expanded to 146, including 47 buildings the Special Operations Task Force considered critical for operational requirements. The buildings included, in addition to billeting, “operations centers, detainee facilities, and other sensitive operations.” The process generated some confusion and frustration, causing one commander to state that he was forced to move Service members multiple times in order to keep them in quarters that KBR would maintain.

By June 2008, many Service members resided in completed sections of the living support area. On June 22, 2008, the DCMA commander sent a letter to the MNC-I chief of staff, reiterating his position that LOGCAP III operations and maintenance would not resume in condemned buildings until KBR completed all life, health, and safety repairs. In response, the Special Operations Task Force – Central developed courses of action and ultimately chose to continue using RPC buildings necessary for operations, but with temporary wiring and water turned off.

The Special Operations Task Force – Central performed risk assessment and mitigation measures in order to continue to use RPC buildings. In June 2008, Special Operations Task Force commanders had a U.S. certified master electrician inspect the 47 buildings they deemed necessary for continued operations. The master electrician inspected for proper grounding of the main distribution panels, water pumps and heaters, and made repairs when necessary to make buildings safe for their intended use. Further, the Commander, Special Operations Task Force – Central issued a policy memorandum to RPC occupants listing building utilization guidelines.

On July 2, 2008, Commander, Special Operations Task Force – Central, signed a memorandum accepting the electrical and fire risks, and listing mitigation measures. On July 4, 2008, the MNC-I chief of staff approved the continued use of the 47 buildings considered critical for operations during the installation of permanent electrical wiring. He requested the DCMA commander grant a one time waiver of DCMA policy and continue to provide LOGCAP support to mission essential buildings. His request demonstrated commanders understood and assessed the risk and had assumed responsibility for the safety of their Service members.

Issue A3: RPC Contracting Officer Representative Support and Mayor's Cell Qualifications and Training

The Special Operations Command did not assign a contracting officer representative for the RPC, and the RPC mayor's cell personnel had limited facilities maintenance experience and received almost no training.

At the time of SSG Maseth's electrocution in January 2008, units had assigned over 460 contracting officer representatives throughout Iraq to work with DCMA. Though one was requested, the Special Operations Task Force - Central did not provide a contracting officer representative on the LOGCAP III operations and maintenance work ongoing at RPC.

Contracting officer representatives supplement the DCMA quality assurance workforce. These representatives can improve contractor support to their units and play a key role in contract oversight in Iraq. It is essential for commanders to emphasize the importance of assigning contracting officer representatives to key outsourced operations and maintenance functions at their units.

During unit deployment to Iraq as the Special Operations Task Force – Central, RPC installation support functions were the responsibility of the Headquarters Support Company Commander. Successive commanders assigned mayor's cell duties to the Electronics Maintenance Section. We interviewed seven former mayors and deputy mayors, and one master sergeant who assisted

the mayor in mayor's cell duties at the RPC. RPC mayors were senior non-commissioned officers and one chief warrant officer.

When interviewed, Service members assigned mayor's cell duties stated they received little training for the assignment. These Service members came from a variety of military occupational specialties, none of which were acquisition related. Only one mayor stated he had facility management experience prior to serving in the mayor's cell. Individuals reported that they received limited training concerning the LOGCAP III contract. The Headquarters and Support Company commanders we interviewed were not involved with mayor's cell activities and provided little or no guidance.

The mayor's cell concept developed informally over time in response to a valid requirement to handle facility maintenance issues. In our opinion that requirement continued to grow. As of March 2009, U.S. Central Command was in its sixth year of operations in Iraq, but mayor's cell staffing had remained an "informal" function at many sites. Training and experience of mayor's cell personnel was varied among the base camps.

Recommendation, Management Comments, and Our Response

The comments from the Commander, MNC-I, were responsive.

A.3.1. The Commander, Multi-National Corps – Iraq, direct subordinate commanders receiving contractor logistical support to assign trained contracting officer representatives as coordinated with the Commander, Defense Contract Management Agency – Iraq.

The Commander, MNC-I, concurred with comment, stating that Joint Contracting Command-Iraq/Afghanistan policy and an MNF-I order dated April 15, 2009, require trained contracting officer representatives for all services contracts. In addition, the Commander, Multi-National Corps – Iraq, plans to produce a fragmentary order "...that includes specified tracking tasks for COR [contracting officer representative] training."

Publication of the planned fragmentary order will complete action on this recommendation.

A.3.2. The Commander, Multi-National Corps – Iraq, establish training requirements for base camp mayors and mayor's cell personnel that as a minimum address facility life, health, and safety deficiency reporting and repair, and basic contractor oversight.

The Commander, MNC-I, concurred with comment, stating that "this is an Army level issue that has yet to be addressed. ADHOC training once deployed will not solve the challenge...The Army should establish proponentcy for mayor cell training before this problem can be corrected."

We agree that Service-wide solution to the issue of mayor's cell training is an Army issue. However, until the Army acts to create a global solution, the Commander, MNC-I has the responsibility for facilities management as exercised by subordinate command's mayor's cell personnel.

Issue A4: Policy and Guidance for Garrisoned, Host Nation-Constructed Facilities

Section 165, Title 10, U.S. Code (10 U.S.C. 165) specifies that “The Secretary of Defense, with the advice and assistance of the Chairman of the Joint Chiefs of Staff, shall provide for the administrative and support of forces assigned to each combatant command.” The statute further states that subject to authority of the Secretary of Defense and combatant commanders, “the Secretary of a military department is responsible for the administration and support of forces assigned by him to a combatant command.”

Various publications and directives implement these over-arching responsibilities within DoD, specifying roles played in providing and maintaining overseas facilities by the Military Departments, Defense agencies, and the Joint Staff. However, we found that detailed policy guidance within DoD did not specifically address the unique support situation posed by extended U.S. military use of host nation-constructed permanent facilities in an unstable environment.

Joint Publication 3-34, “Joint Engineer Operations,” February 12, 2007, stated that operations move from the contingency to the enduring phase after two years. The publication further discussed semi-permanent and permanent facilities, building systems, construction material procurement, and contracting support. It outlined contingency construction standards (organic, initial, and temporary), but was silent concerning construction standards for enduring facilities. Availability and suitability of host nation support was one of the facilities requirements factors considered during planning for operations, but the publication did not discuss long-term use of permanent host nation-constructed facilities.

Army publication series 415 (construction) and 420 (facilities management) contained Army doctrine. The base construction regulation is Army Regulation 415-16, “Army Facilities Components System,” March 17, 1989. The regulation “...establishes policy and procedures for the development, maintenance, and use of the Army Facilities Components System (AFCS) in support of overseas contingency operations.” The referenced Army Technical Manuals provided planning guidance, designs, material lists, and user guides for theater of operations construction. The regulation assumes construction from the ground up, not utilization of existing facilities.

The base regulation for facilities management was Army Regulation 420-1, “Army Facilities Management,” November 2, 2007. The regulation consolidated facilities engineering regulations and provided “...policies, and responsibilities for conduct and management of facilities engineering, housing, fire and emergency services, and environmental support.” While the regulation stated it applied to the entire Active Army, tone, content, and references were directed at permanent bases and garrisons, not contingency, expeditionary, or theater of operations facilities in unstable environments.

U.S. Central Command Regulation 415-1, “Construction,” October 18, 2004, defined two basing categories. Permanent basing was associated with long-term strategic force stationing and contingency basing addressed short-term contingency operations. The regulation required the U.S. Central Command staff engineer to establish theater contingency construction standards through U.S. Central Command operations orders. It also required “maximum use...of existing

facilities, including those of the host nation.” The regulation did not address the repair and maintenance of inhabited permanent host nation-constructed facilities.

Actions After January 2008

In their “plans, policies, and procedures” line of operation, TF SAFE sought to establish a theater-wide baseline electrical code and implement trend analysis and feedback mechanisms for preventative measures. The TF SAFE effort and the MNF-I fragmentary orders were necessary because of gaps in Joint, Army, and U.S. Central Command policies described above. DoD needs definitive policy guidance for facility maintenance at enduring bases in the theater of operations, specifically extended use of host nation-constructed permanent facilities.¹³

Recommendation, Management Comments, and Our Response

Comments were responsive and, as a result of comments from the Army Assistant Chief of Staff for Installation Management, we changed the recommended Army Regulation for revision from Army Regulation 420-1, “Army Facilities Management;” to Army Regulation 415-16, “Army Facilities Components System.”

A.4. The Director, Joint Staff revise Joint Publication 3-34, “Joint Engineer Operations;” the Commander, U.S. Central Command revise U.S. Central Command Regulation 415-1, “Construction;” and the Army Chief of Engineers revise Army Regulation 415-16, “Army Facilities Components System,” to establish facility maintenance standards for extended use of host nation-constructed facilities in the theater of operations.

The Director for Logistics, Joint Staff, concurred, stating they would address the issue during the scheduled update of Joint Publication 3-34, scheduled for 2010. The Army Assistant Chief of Staff for Installation Management concurred “that the appropriate publications which set forth joint doctrine for extended use of base in theaters of operations need to be updated.” The Assistant Chief of Staff noted that Army Regulation 420-1, “Army Facilities Management,” identified the Chief of Engineers as the Army official responsible for “...the engineering and facilities portion of contingency plans and base support development,” and concluded that no update to Army Regulation 420-1 was needed.

After reviewing relevant Army publications, we agree with this position.

¹³ This issue of the adequacy of the policy guidance provided in Army Regulation 420-1 for situations involving contingency, expeditionary, or theater of operations facilities in unstable environments is separate and distinct from the issue of the applicability to or inclusion of AR 420-1 in the LOGCAP III contract for the purpose of identifying the applicable electrical standard to be utilized by the contractor.

B. The Contracting Community

As described previously, U.S. Army Corps of Engineers, Army Sustainment Command (later Army Contracting Command), and DCMA wrote, awarded, and/or administered the contracts for services at the RPC. The task order requirements governing operations and maintenance for the RPC prior to January 2, 2008, originated from two base contracts: W912ER-04-D-0005 (U.S. Army Corps of Engineers supply and services contract) and DAAA09-02-D-0007 (LOGCAP III base contract). Task Order 139, change 4, August 25, 2007 to the LOGCAP III contract was in force at the RPC on January 2, 2008. We identified six areas of systemic weakness relevant to SSG Maseth's electrocution under the control of the contracting community.

Issue B1: LOGCAP III – Contract Requirements for Electrical Standards

The LOGCAP III contract language establishing and directing electrical standards for operations and maintenance was not explicit. Two clauses in the basic LOGCAP contract had broad application to operations and maintenance. The first was section 1.14, which stated, "The contractor will be responsible for the quality, technical, logistical and financial accuracy, and the coordination of all aspects of performance." This reference shows the Government expected contractor performance to meet quality and technical standards. The second was section 1.4, which stated, "Unless indicated otherwise, performance standards will be in accordance with Army regulatory guidance." This statement conveyed the Government's intent with regard to contractor operations.

In September 2008, the Commander, DCMA International, wrote the "...applicable Army regulatory guidance..." for operations and maintenance under LOGCAP is Army Regulation 420-1, "Army Facilities Management." In chapter 23 "Utility Services," section VIII "Electric," the regulation invokes specific standards:

Maintenance and repair will be in accordance with National Fire Protection Association (NFPA) 70B, TM [Technical Manual] 5-683, TM 5-684, TM 5-685, and NFPA 780. Safety procedures described in NFPA 70E, EM 385-1-1, UFC [Uniform Building Code] 3-560-01 and the National Electrical Safety Code (NESC) ... will be followed while performing maintenance and repair.

However, Army Regulation 420-1 was not well suited for strict application in a deployed environment. Chapter 23 also states that the Commander, Installation Management Command, will "ensure Army garrisons comply with all applicable Federal laws and regulations," and "maintain, repair, and test grounds and grounding systems for real property." Further, the regulation requires the Commander, Installation Management Command, to "ensure that contracts for operation and maintenance of infrastructure assets by a contractor include provisions assigning the awardee responsibility for performance of all applicable actions required for compliance with appropriate Federal, state, and local health, safety, and environmental laws and regulations." Installation Management Command acknowledged that as of January 2008, no troop location in Iraq was under their authority.

General guidance in the basic contract was regularly supplemented by additional directives found in basic and specific task order statements of work. Section 8.1 of Task Order 139 defined operations and maintenance services, stating:

The contractor shall provide O&M [operations and maintenance] Services and establish a preventative maintenance program to maximize life expectancy of base camp facilities at a reasonable cost to the Government. O&M consists of maintenance and repair of facilities listed in Appendix F (Facilities) as defined by Department of the Army Pamphlet 420-11 and Appendix C [Definitions]. Contractor taskings will not be issued in facilities that are known to have friable asbestos. However, if at any time during the conduct of work or work assessment associated with any facility repair, renovation, or improvement, the contractor has reason to believe that friable asbestos is present within the workspace, contractor shall stop the work for assessment and report the site conditions to the ACO [Administrative Contracting Officer].

The clause does not specify a standard for electrical work, but does specifically mention asbestos hazards.

Department of the Army Pamphlet 420-11, “Project Definition and Work Classification,” defines maintenance as “...work required to preserve and maintain a real property facility in such a condition that it may be effectively used for its designated functional purpose...” and repair as, “...the restoration of a real property facility to such condition that it may effectively be used for its designated functional purpose.” It includes as repair the “relocation and reconfiguration of utility systems into arrangements to meet current standards and current code requirements...” However, it is silent concerning specific codes and standards.

In contrast to operations and maintenance requirements, Task Order 139, change 4, August 29, 2007, specified an electric code for “other construction.” Section 8.2.1, “Refurbishment,” stated:

The contractor, in coordination with the LSO [LOGCAP Support Officer], Base Camp Mayor, and at the direction of the ACO [Administrative Contracting Officer], shall evaluate, upgrade or refurbish hardstand buildings to a safe and livable condition. This new work may include refurbishment, construction, alterations and upgrades. All new work shall be in accordance with International Building Code and British Standard 7671. As dictated by the Uniform Facilities Code (UFC) “the minimum requirements of National Fire Protection Act (NFPA) 70, National Electric Code (NEC) and the American National Standards Institute (ANSI) C2, National Electrical Safety Code (NESC) must be met” when it is reasonable to do so with available materials. When conditions dictate deviation, then provisions within the International Electrical Code (IEC) or British Standard (BS[]) 7671 will be followed.

However, the routine facility maintenance that KBR performed as operations and maintenance at LSF facilities did not qualify as refurbishment, construction, alterations, or upgrades, and therefore was not subject to the foregoing standard. A licensed and certified electrician who worked for KBR provided a succinct summary of the issue. He stated, “...it was common place.

I know when we put in new stuff [‘new work’ as defined in the contract] we would ensure it was properly grounded. We knew that KBR would not rewire the building. You work with what you got and you learn to accept it.” We found no evidence that the Government applied an explicit electrical standard for operations and maintenance work prior to SSG Maseth’s electrocution on January 2, 2008.

Actions After January 2008

The applicable electric code for use in maintaining Iraqi-constructed buildings was a contentious issue. Representatives from DCMA, TF SAFE, the Tri-Services Electrical Working Group, and KBR met in October 2008 to discuss an electrical protocol for grounding and bonding. KBR requested use of the British Standard. KBR also stated that in November 2008, DCMA considered mandating the National Electric Code for all contract work.

In December 2008, representatives from the Army Sustainment Command, DCMA, and KBR met to discuss modifying the LOGCAP III contract to specify electrical standards for the U.S. Central Command area of responsibility. The letter modification was signed on December 18, 2008, and modified on March 2, 2009. It clarified the requirements for electrical standards for all work performed after the letter was signed.

- New construction or additions to facilities or buildings: The contractor shall provide all electrical services in accordance with the most current edition of the National Electric Code.
- Existing permanent facilities: The contractor shall provide all electrical services in accordance with the electrical standard resident in the existing facility “...as long as that standard is either the British Standard (BS) 7671, the most current edition of the NEC [National Electric Code], or the host nation standard, if it is equal to or more stringent than the NEC.” If the existing standard is not equal to the British or National Electric Code standard, the contractor shall provide the administrative contracting officer an analysis of permitted standards and a recommendation based on cost, schedule, and performance.
- Existing temporary and semi-permanent structures. The contractor shall provide all electrical services in accordance with the most current edition of the National Electric Code.

The second point above directly addressed RPC buildings. The letter further required the contractor to direct questions and requests for written waivers or deviations from the Authority Having Jurisdiction. Finally, the modification required the contractor to ensure all contractor and subcontractor workers comply with Unified Facilities Criteria 3-560-01, “Electrical Safety, O&M” [operations and maintenance]. While outside the scope of this report, the process described above would be applicable to all contract statements of work in areas of contingency operations.

Issue B2: Training and Certification of Contractor Electrical Workforce

The LOGCAP III contract did not specify minimum training or certification for trade workers. When queried concerning contract requirements for electrician's qualifications, Army Contracting Command officials referred to paragraphs 1.12 and 1.14 of the base contract, paragraph 1.0 of the statement of work for Task Order 139, and Federal Acquisition Regulation clause 52.236-5 (we discuss application of this clause in section C.1). None of the references discuss professional qualifications.

Paragraph 1.12 states that "...all contractor employees shall either be literate in English or a translator available at all times to...ensure communications are provided as necessary to understand instruction concerning equipment to the extent that performing his duties requires him to operate, maintain, repair, or in some way interact with the equipment and the customer."

Paragraph 1.14 discusses quality control and states the "Contractor will be responsible for the quality, technical, logistical, and financial accuracy, and the coordination of all aspects of performance." The paragraph does not discuss who or how, it refers to results.

Paragraph 1.0 of the Task Order 139 scope of work states the "Contractor shall provide all resources and management necessary to perform the mission in accordance with the basic Contract No. DAAA09-02-D-0007 and the task order statement of work described herein." This paragraph does not establish worker qualifications.

As a result, the Government in good faith relied upon the contractor to provide qualified people to do the work as part of the workmanlike standard and quality provisions provided for under the terms of the contract. The LOGCAP III contract referenced Federal Acquisition Regulation clause 52.236-5, which required all work be performed "in a skillful and workmanlike manner." (See Issue C1, p. 42.) As the contractor failed to do this, Army Sustainment Command modified the contract after January 2008 to include qualification standards for personnel.

Actions After January 2008

In June 2008, KBR stated in a briefing to Government representatives that 601 of the 925 assigned electrician personnel (associate technicians, electricians, foremen, general foreman, and superintendents) had credentials. They defined credentials as U.S. state licenses, non-U.S. or other credentials, trade school experience, U.S. union certification, or military training.

On July 21, 2008, Army Contracting Command added clause H-37, "Personnel Certifications and Qualifications" to the LOGCAP III contract, specifying minimum requirements for trade workers.

The Contractor shall ensure that Contractor personnel assigned to perform construction, facilities maintenance and repairs, facilities technical inspections, facilities renovations or Quality Assurance/Quality control functions possess a license, certification, training and/or education commensurate with the level of duties to which they are assigned.

Contract clause H-37 also required the contractor to submit a “Trades Certificate and Validation Plan” to the Government, and include the clause in subcontracts requiring the performance of construction, facilities maintenance and repairs, facilities technical inspections, facilities renovations or quality assurance/quality control functions.

Issue B3: Waiver of Requirement to Complete Technical Inspections per LOGCAP Statement of Work

Army Procuring Contracting Officer Forward acceptance of KBR assumptions during contract negotiations resulted in a false perception that buildings and peripheral equipment were in acceptable condition during the transfer of RPC facility operations and maintenance to LOGCAP III. On February 23, 2007, the Army Procuring Contracting Officer Forward directed KBR to perform operations and maintenance at the RPC to include 126 buildings. By reference to the KBR project planning estimate, KBR was to perform facility maintenance at “level B.” The Task Order 139 statement of work contained the following requirement.

8.1.2 Technical inspection of all facilities not initially designated as “Level A” in Appendix F (Facilities) shall be completed before the contractor assumes operations and maintenance responsibilities. Upon conclusion of the technical inspection, if a facility requires substantial repairs, then those repairs will be completed in coordination with the LSO [LOGCAP Support Office] and the base camp mayor and at the direction of the ACO [Administrative Contracting Officer], prior to assuming operations and maintenance. Upon completion of Technical Inspection and correction of any deficiencies, the ACO [Administrative Contracting Officer] will direct the contractor to assume operations and maintenance and amend Appendix F (Facilities).

The contract action transferring RPC operations and maintenance to LOGCAP III was completed in 19 days. Assumption number 14 in the referenced KBR project planning estimate illustrates that KBR assumed they would not conduct complete technical inspections on the buildings prior to assumption of facility maintenance responsibilities.¹⁴

The short suspense for the project planning estimate does not allow for a complete technical inspection. KBR assumes the buildings are up to the quality standards of LOGCAP and has based the estimate on assuming operations and maintenance on buildings and peripheral equipment that are in acceptable condition.

The contract anticipated a collaborative effort between the Government and contractor to identify and correct existing facility deficiencies to establish a facility condition baseline. By approving the administrative change letter on February 23, 2007, the Army Procuring Contracting Officer Forward accepted the KBR assumption and waived the contract requirement for technical

¹⁴ Assumptions associated with the KBR project planning estimate are further discussed in Issue B5 on page 35.

inspections at RPC. KBR assumed operations and maintenance responsibility for the buildings in their existing condition.

KBR performed inspections of the electrical and heating, ventilation, and air conditioning systems in RPC buildings in February 2007, prior to the administrative change letter of February 23, 2007. The KBR inspector noted substantial deficiencies with electrical systems (see appendix G for a summary of LSF building deficiencies). Inspection findings included improper grounding of some equipment (e.g., water heaters), but made no mention of water pumps.

We concluded that by waiving the requirement to conduct technical inspections, the Army Procuring Contracting Officer Forward relieved the contractor of any requirement to provide the Government with inspection results. Records showed the RPC mayor requested and received the inspection results of February 2007 in November 2007. The Service member who received the inspection results stated he departed Iraq shortly after receiving them and never read them. Neither DCMA nor the Army Procuring Contracting Officer Forward directed KBR to repair deficiencies identified by the February 2007 inspections. In fact, the results of KBR technical inspections directed by DCMA after the January 2, 2008, electrocution almost duplicated the February 2007 results (Appendix G). The actions of the Army Procuring Contracting Officer Forward waiving the requirement resulted in an assumption of undetermined risk by the Government.

Actions After January 2008

Following SSG Maseth's electrocution, the Commander, DCMA Iraq/Afghanistan, directed KBR to perform technical inspections of "...all hardstand facilities...for which a complete technical inspection was not performed...", and "Develop a facilities inspection O&M [operations and maintenance] standard operating procedure to ensure all life, health, and safety conditions are adequately met prior to assumption of O&M support." The commander also testified that KBR technical inspections prior to assumption of operations and maintenance support was "...absolutely a non-negotiable position."

Issue B4: Contract and Task Order Administration

The LOGCAP III contracting office (Army Sustainment Command) and contract administration office (DCMA) quality assurance programs did not identify improper grounding of facilities as a widespread deficiency prior to SSG Maseth's electrocution. Both offices have specified quality assurance responsibilities. Federal Acquisition Regulation paragraph 46.103 states that the contracting office was responsible for including in contracts "the appropriate requirements for the contractor's control of quality for the supplies or services to be acquired." Paragraph 46.104 makes the contract administration office responsible to "verify whether the supplies or services conform to contract quality requirements," and report to the contracting office any defects.

Army Sustainment Command included Federal Acquisition Regulation clause 52.246-5, "Inspection of Services – Cost Reimbursement," in the LOGCAP III solicitation. The clause requires the contractor to "provide and maintain an inspection system acceptable to the

Government covering the services under this contract.” Our review of documents found no indication that either the Army Sustainment Command or DCMA found system-wide fault with the KBR inspection system for operations and maintenance at the RPC prior to January 2008.

According to a KBR summary, DCMA issued a total of eight corrective action requests to KBR concerning electrical work Iraq-wide for the five years prior to SSG Maseth’s electrocution. In this case, electrical work included power generation and transmission, as well as distribution systems within buildings. The number of corrective action requests for electrical work increased to 53 for 2008.

However, the services KBR provided to U.S. Forces under the LOGCAP contract covered a wide spectrum of functions (Figure 5, page 12). Facilities operations and maintenance was only one of several services requiring specific technical knowledge. In congressional testimony on July 30, 2008, a DCMA representative acknowledged they “do not develop or retain employees with deep technical skills in overseeing construction and facilities contracts.” The DCMA quality assurance representative with responsibility for RPC at the time of SSG Maseth’s electrocution had no experience with facility electrical work.

We are aware of two instances where senior contracting officials were briefed or made inquiries concerning the safety of electrical systems in Iraq. First, in the summer of 2006, Army officers in the LOGCAP Support Unit produced and distributed a briefing titled, “Sub-standard Electric Wiring Conditions.” The self-stated purpose of the briefing was to “...bring command awareness and attention to a serious threat to the life, health and safety of our soldiers.” Prepared with the assistance of KBR personnel, the briefing discussed the poor electrical wiring conditions at forward operating bases. The officers testified that they provided the briefing to senior officials in DCMA, Army Sustainment Command, MNF-I, and MNC-I. Notably, the issue was raised during a period when MNF-I planned to consolidate forces and abandon the forward operating bases. No action was taken.

Second, at the request of the DCMA Commander in Iraq, in November 2006 the DCMA Contract Safety Center reviewed the DCMA LOGCAP and KBR contract safety posture. The report, completed on February 18, 2007, identified over 280 electrical fires from August 2006 to January 2007, and concluded that “findings show a safety threat theater wide created by the poor quality electrical fixtures procured and installed, sometimes incorrectly, thus resulting in a significant number of fires.” The report recommendations were directed to the Commander, DCMA – Iraq, and focused on the narrow issue of assigning safety personnel in theater. The DCMA Commander in Iraq at the time of the January 2, 2008, electrocution stated he was not aware of the report until April 2008.

Actions After January 2008

The Commander, DCMA Iraq/Afghanistan, and the Army Procuring Contracting Officer Forward took action at the RPC and Iraq-wide in response to SSG Maseth’s electrocution. Their actions included issuing project planning requests (obtaining estimates from KBR), letters of technical direction (actions within the existing Task Order 139 scope), and administrative change letters (actions requiring additional funding). They took actions supporting command efforts to

move Service members into safe facilities at the RPC, and to identify and mitigate risk caused by electrical systems Iraq-wide. All instances demonstrated increased quality assurance of contractor efforts. In addition, the Army suspended award fee payments.

Actions at the RPC

On January 3, 2008, the administrative contracting officer directed KBR to conduct emergency technical inspections of the 126 buildings at RPC receiving operations and maintenance support (Table 1, No. 1). KBR was to “...assess and advise the Special Operations Task Force - Central on necessary improvements in the electrical and plumbing systems to bring these buildings up to a safe standard.” KBR repeated technical inspections conducted in February 2007. According to the dates on the electronic files provided by KBR, they completed the technical inspections of RPC buildings by January 18, 2008.

No.	Date	Title
1	January 3, 2008	LOTD [Letter of Technical Direction] KBR 08-139X-D9-1006, Request for Emergency Technical Inspection (TI) for the 126 Buildings at FOB D
2	January 11, 2008	PPR KBR-08-139X-1003 – To Provide a 300 PAX Life Support Area (LSA) for the Special Operations Task Force (SOTF) Located on the Radwaniyah Palace Complex (RPC)
3	January 21, 2008	LOTD KBR-139X-D9-1008, Request for Release of Technical Inspections (TI) for the 126 Buildings at FOB D9
4	January 31, 2008	ACL KBR-08-139X-D9-1002 Provide 300 PAX LSA for SOTF at Radwaniyah Palace Complex (RPC)
5	February 1, 2008	PPR KBR-08-139X-1005 - Emergency LOGCAP Support to Provide Life, Health and Safety Upgrades to Buildings 1, 5 & 6 Located on the Radwaniyah Palace Complex (RPC)
6	February 1, 2008	(EMERGENCY) ACL KBR 08-139X-1003 Provide Life, Health and Safety Upgrades to Legion Security Forces Buildings 1, 5 and 6 at Radwaniyah Palace Complex (RPC)
7	April 20, 2008	PPR KBR-08-139X-1005 R2 (Revised) – To De-scope the Request for Emergency LOGCAP Support to Provide Life, Health and Safety Upgrades to Buildings 1, 5 and 6 Located at the Radwaniyah Palace Complex (RPC)

Table 1. Initial Contracting Actions Post Incident at the LSF and the RPC.

Both the Army Procuring Contracting Officer Forward and the Administrative Contracting Officer supported command efforts to move Service members into safe facilities at the RPC. Support included two major efforts: construction of the RPC living support area, and repair and upgrade of LSF buildings.

On January 11, 2008, the LOGCAP III Support Officer sent KBR a project planning request for the RPC living support area (Table 1, No. 2). The request required a construction estimate for site preparation, power, force protection, housing, and latrine and shower facilities for 300 personnel. The request included an estimate for “Level A” operations and maintenance after

construction was complete. KBR supplied a project schedule that projected completion by July 19, 2008. The administrative contracting officer provided KBR with the notice to proceed for a not-to-exceed amount of approximately \$2 million on January 31, 2008 (Table 1, No. 4).

On February 1, 2008, the Administrative Contracting Officer provided \$50,000 for the life, health, and safety upgrades to LSF-1, -5, and -6 (Table 1, No. 6). The Special Operations Task Force – Central had no plans to occupy LSF-5 and -6, and the Iraqi occupants modified ongoing KBR renovations. At the request of the military command, the Administrative Contracting Officer dropped those two buildings from the directed work (Table 1, No. 7).

Iraq-wide Efforts

On February 26, 2008, the LOGCAP III Theater Administrative Contracting Officer initiated Iraq-wide action. The letter of technical direction gave KBR four tasks (Table 2, No.1):

- develop and implement a facility numbering system for all KBR maintained facilities,
- identify hardstand facilities that were added to the modified statement of work for which a complete technical inspection was not performed; perform the inspection,
- perform an immediate technical inspection on all hardstand facilities on the master statement of work; priority for inspections on water pumps and heaters, plumbing, and electrical systems, and,
- review the standard operating procedure for service order request handling to ensure that life, health, and safety issues are properly prioritized.

No.	Date	Title
1	February 26, 2008	LOTD [Letter of Technical Direction] KBR-08-139X-Iraq-1037 Facility Numbering and Technical Inspections
2	March 4, 2008	LOTD KBR-08-139X-Iraq-1037R1 Facility Numbering and Technical Inspections
3	April 24, 2008	LOTD KBR-08-139X-Iraq-1037R2 Facility Numbering and Technical Inspections
4	June 1, 2008	LOTD KBR 08-139Y-Iraq-1062 Way Ahead for Facilities with Technical Inspections Performed Under LOTD KBR 08-139X-Iraq-1037

Table 2. Follow-on Contracting Actions Iraq-wide.

The Theater Administrative Contracting Officer issued two revisions to the February 26, 2008, letter of technical direction (Table 2, No. 2 and 3). Revision 1 on March 4, 2008, extended the deadline for KBR to submit a plan to accomplish directed tasks by five days. Revision 2, issued on April 24, 2008, expanded the fourth task in the initial letter. KBR was directed to develop standard operating procedures for maintenance and repair of “semi-permanent facilities and structures,” and facilities inspection prior to assuming operations and maintenance support.

On June 1, 2008, the Deputy Theater Administrative Contracting Officer required follow-on action to the February 26, 2008, directive (Table 2, No. 4). The letter of technical direction issued in June instructed KBR to:

- In coordination with site mayors' cells, submit service order requests to repair identified deficiencies within the scope of Task Order 139 in all facilities maintained at "Level A" and "Level B."
- Identify deficiencies and submit required repairs for work considered outside the scope of Task Order 139 in all facilities maintained at "Level A" and "Level B."
- Identify and report all deficiencies to facilities maintained at "Level C."
- Identify and report all buildings designated as uninhabitable during the technical inspection. (Uninhabitable defined as deficiencies posing an immediate threat to the life, health, or safety of occupants that cannot be repaired on the spot or with the personnel remaining in the building.)
- Maintain a common database for all facilities by site to verify status.
- Develop a reporting format for approval by DCMA and present weekly updates to site administrative contracting officers, military leadership, and a theater-wide update to DCMA Iraq/Afghanistan headquarters.

As of March 19, 2009, KBR was conducting the inspection of over 75,000 structures in Iraq and was making life, health, and safety repairs. KBR transferred over 36,000 structures to TF SAFE for re-inspection; the remaining 53,000 needed additional repairs or upgrade. TF SAFE re-inspected and accepted 22,000 of the 36,000 structures as safe, and the remainder had yet to be re-inspected.

Review of KBR Electrical System Repairs – Corrective Action Requests

KBR completed work on LSF-1 as requested by the February 1, 2008, administrative contracting officer change letter and conducted a final inspection on July 1, 2008. The Quality Completion Report listed the tasks from the requirement document and rated them all "accept," including the requirement to "...at a minimum, ensure applicable international electrical code compliance within Building 1."

On August 25, 2008, representatives of the U.S. Army Corps of Engineers Gulf Region Division conducted an electrical safety audit of KBR work at RPC. As a result of the safety audit findings, on September 1, 2008, the DCMA Theater Quality Assurance Representative issued a

Level II corrective action request to KBR.¹⁵ The corrective action request addressed work performed after SSG Maseth's electrocution and included three findings at LSF-1. All three findings stated noncompliance with provisions of the National Electric Code.

On September 11, 2008, the Commander, DCMA-International, issued a corrective action request Level III to KBR. The request resulted from independent inspections conducted by electrical technicians from the U.S. Army Corps of Engineers, TF SAFE, and the Army Combat Readiness Center. The corrective action request cited 231 incidents of personnel reporting shocks Iraq-wide from September 2006 to July 2008, and that KBR noncompliance with the LOGCAP III contract had "...created an immediate life, health and safety hazards for our deployed personnel." Specifically the corrective action request stated KBR failed to identify and correct:

- systemic grounding and bonding deficiencies in accordance with the LOGCAP statement of work, Army Regulation 420-1, and the National Electric Code, and,
- numerous program-wide deficiencies in implementation, administration, and execution of LOGCAP contract quality requirements.

KBR submitted an initial corrective action plan on September 22, 2008, which DCMA did not accept. KBR updated the plan with additional information and clarification several times in the following months. On February 13, 2009, DCMA accepted the KBR corrective action plan.

Actions taken to reduce electrical hazards in Iraq have been beneficial. However, the lack of DCMA experience with post, camp and station type activities and construction caused them to rely on technical expertise from the military services in Iraq. The DCMA Director testified to the House Committee on Government Reform on July 30, 2008 that, "DCMA does not develop or retain employees with deep technical skills in overseeing construction and facilities contracts." DCMA Iraq/Afghanistan leadership confirmed this shortfall during interviews conducted in Iraq.

Recommendation, Management Comments, and Our Response

The comments from the Director, DCMA, were responsive.

¹⁵ Corrective Action Requests are requests for root cause remedy of a contractual noncompliance issued by the contract administration office. There are four levels of corrective action requests, reflecting the severity of the nonconformity and the level of supplier management visibility required to adequately address corrective actions. The levels are: Level I – Issued for nonconformity that can be corrected on the spot and where no further corrective action response is necessary. Level II – Issued when contractual nonconformity cannot be corrected on the spot. Level III – Issued to the supplier's top management to call attention to serious contractual nonconformity. Level IV – Issued to the supplier's top management when a Level III has been ineffective or the contractual nonconformity is of such a serious nature to warrant contractual remedies such as suspension of progress payments or product acceptance activities, termination for default, and suspension or debarment, in accordance with applicable FAR/DFARS [Defense Federal Acquisition Regulation] policies and procedures.

B.4 The Director, DCMA, should provide additional contingency contract-related life, health, and safety deficiency identification training for quality assurance specialists prior to deployment to Iraq.

The Director, DCMA, partially concurred with the recommendation. He stated that “It is neither practical nor consistent with the specialized oversight mission of DCMA’s quality assurance representatives (QARs) to provide [them] with LHS [life, health, and safety] deficiency identification training associated with the full breadth of the LOGCAP services.” However, DCMA agreed that quality assurance specialists “...should be generally aware of the LHS [life, health, and safety] risks associated with LOGCAP services.” In that regard, DCMA includes a safety module in its mandatory basic contingency operations training course taken by all deploying personnel. The module discusses basic hazard identification and includes electrical challenges. Further, the DCMA Director stated that DCMA continued discussions with the Army Sustainment Command and Army Contracting Command to fill identified voids in oversight expertise for contract facilities maintenance and repair, including electrical services in Iraq.

We reviewed the basic contingency operations training course schedule for July 2009, and the briefing slides for the safety lesson. The safety discussion is sufficient to make deploying personnel aware of electrical hazards. However, in our opinion, quality assurance specialists without prior experience need more than a 40 minute lesson to make them aware of contract-related life, health, and safety issues.

Issue B5: Transfer of Operations and Maintenance at RPC to LOGCAP III

During 2006, the KBR Middle East Region Office performed operations and maintenance function at the RPC under contract number W912ER-04-D-0005. The contract was awarded and administered by the U.S. Army Corps of Engineers. In December 2006, the Commander, Combined Joint Special Operations Task Force – Arabian Peninsula, submitted a request for \$3.9 million to the MNC-Iraq Joint Acquisition Review Board to exercise the renewal option for the existing operations and maintenance contract. The requirement was approved.

On February 4, 2007, the Commander, Combined Joint Special Operations Task Force – Arabian Peninsula, requested the LOGCAP Support Unit submit a KBR cost estimate for operations and maintenance services for RPC under the LOGCAP III contract. The commander stated that the request was “strictly part of an on-going effort to reduce the cost of operations at RPC as good stewards of Multi-National Corps – Iraq base operations funding.” He further wrote that:

The six month option of the current contract ends on 22 Feb 2007. The Gulf Region Division [U.S. Army Corps of Engineers] has informed us that the optimal time to transfer authority of this contract would be in the end of the next 6 month cycle on 21 August 2007. This will allow a deliberate review and decision well in advance of the transfer to ensure no interruption of support and no penalties for ending the current contract early.

The recommendation from the Gulf Region Division to defer the transfer of operations and maintenance authority was not implemented. The LOGCAP Support Officer initiated a project planning request to KBR on February 8, 2007, and KBR provided an initial estimate the next day for \$10.1 million. Documentation showed that KBR revised the planning estimate at least three times, submitting an estimate for \$3.2 million on February 23, 2007, that the Government accepted. Three issues concerning the project estimating process were of interest:

- The final accepted cost was \$3.2 million; less than the \$3.9 million renew option of contract W912ER-04-D-0005. It excluded the 9.2 percent Supervision and Administration charge added to contracts administered by the U.S. Army Corps of Engineers, and reflected the lower award fee rate of LOGCAP III. Command and contracting representatives indicated the Army expected to receive the same level of service.
- The initial estimate included an operations and maintenance materials cost for each of the 126 structures on RPC based on a fixed rate per square foot totaling \$1.8 million. KBR deleted this planning factor from the final estimate and assumed “Level B” maintenance. We conclude that the KBR materials estimate anticipated responding only to individual service order requests during the contract period of performance, maintaining the facilities in their existing condition.
- The initial estimate included a workforce of two electrician foremen and four electricians dedicated to RPC. Following negotiations between the LOGCAP Support Office and KBR, the final estimate scaled back to one electrical foreman and one electrician. This left KBR with significantly fewer resources to correct existing deficiencies and conduct oversight.

The Army Procuring Contracting Officer Forward approved the price negotiation memorandum and signed administrative change letter 07-139-D9-005 directing KBR to perform operations and maintenance at RPC under the LOGCAP III contract the same day that KBR submitted the final estimate.

Approval of the administrative change letter codified KBR assumptions contained in the planning estimate. Three assumptions related directly to operations and maintenance of electrical systems on RPC and are of interest to this review.

- Assumption number 14: “The short suspense for the PPE [project planning estimate] does not allow for a complete TI [technical inspection] of each building. KBR assumes the building are up to the quality standards of LOGCAP....”
- Assumption number 16: “KBR assumes the building systems to be in good condition and upon discovery of defective systems (Electrical, Mechanical, or Structural) repairs will be made at the direction of an ACL [administrative contracting officer change letter].”
- Assumption number 27: “KBR assumes FACILITY MAINTENANCE will be level B.”

The Commander, DCMA Iraq/Afghanistan, later realized that “...the problem was not agreeing to have full and complete inspections and repairs performed up front. Because of Level B maintenance, KBR was only obligated to perform service order or work request repairs per requests and direction from the unit mayor cell.” Of note, Task Order 139 Appendix F from August 2007 shows that facilities in 22 of 23 sites in KBR region D and F received mostly “Level A” support. Only at RPC did the majority of the facilities receive “Level B” support.

Administrative change letter 07-139-D9-005 had a period of performance from February 24, 2007, to August 31, 2007. RPC operations and maintenance was later integrated into LOGCAP Task Order 139 when the contracting officer at Rock Island Arsenal, Illinois, (part of Army Sustainment Command, later Army Contracting Command) included the administrative change letter into the contract Appendix F, Facilities via a “sweep” modification. This action made the period of performance for operations and maintenance at RPC the same as for Task Order 139.

The total elapsed time from the command’s request to completion of the contract action was 19 days. Personnel involved in the effort believed it to be “rushed” and insufficient to allow KBR time to complete required technical inspections. The renewal option to the existing maintenance contract (W912ER-04-D-0005) was requested and approved prior to the expiration date of the previous option. There was no compelling reason to complete the action by February 23, 2007.

Issue B6: Government Evaluation of KBR Work

The results of the 2007 award fee board¹⁶ indicated that the Government was satisfied with KBR performance under LOGCAP III. In July 2007, the award fee board, including representatives from the procuring contracting officer (Army Sustainment Command), administrative contracting officer (DCMA), and customer (MNF-I), rated overall KBR performance in Iraq for September 2006 to June 2007 between 82 and 96 percent. The specific rating from DCMA and MNF-I customers for the area containing the RPC was “excellent” across all categories based on “consistently excellent” ratings from unit representatives and a 98 percent survey respondent satisfaction rate.

In a letter dated October 17, 2007, the LOGCAP III award fee determining official rated KBR performance “Very Good” for the period of performance from September 1, 2006, to June 30, 2007. He noted KBR technical performance as a “...systematic strength during the surge.” Additionally, he pointed out that “...the surge activity was of utmost importance during this evaluated period of performance and overall customers and DCMA noted that KBR handled the surge in a positive manner across most sites within the Base Logistics Support scope.” One comment from a garrison command customer at the award fee board noted as a weakness that there was a “...reluctance to repair sewer lines and other Iraq infrastructure.”

¹⁶ LOGCAP III was a cost plus award fee contract, or a cost reimbursement contract that provides an estimated cost plus a fee consisting of a base amount fixed at inception of the contract and an award amount. The award amount is a pool of dollars available to the contractor to earn through excellent contract performance. The award fee determination is made unilaterally by the Government based upon periodic subjective evaluations of contractor performance.

We found no mention of significant fault with the quality of work relating to electrical systems at RPC, or discussion of electrical system risk requiring building upgrades or declaring buildings unsafe. However, repair of electrical systems was not a specified award fee criterion.

Actions After January 2008

Army Sustainment Command suspended the payment of LOGCAP III award fees following SSG Maseth's electrocution. In January 2009, LOGCAP program personnel at Army Sustainment Command indicated award fee payment would remain suspended pending resolution of outstanding electrical issues in Iraq and the KBR response to the September 11, 2008, DCMA corrective action request. As of July 2009, the award fee suspension continued.

C. Operations and Maintenance Contractors

Two contractors provided operations and maintenance support to the RPC from November 2003 to January 2008: Washington Group International/Black and Veatch from November 2003 to February 2006, and KBR from March 2006 to January 2008. We identified five areas of systemic weakness with contractor operations relevant to SSG Maseth's electrocution.

Issue C1: Electrical Code Compliance

A Combined Joint Special Operations Task Force-Arabian Peninsula J-4 (Engineer) staff member stated the contract to create an entry control point and living and working areas for the Iraqi Legion Security Force, including the building called LSF-1, was awarded to a local Iraqi contractor. The former J-4 (Engineer) told us that during the initial refurbishment of permanent, host nation-constructed buildings at the RPC, his biggest problem with the Iraqi contractors is they did not ground or bond electrical systems. In an interview, the first LSF-1 resident stated the project was completed and he moved in to the refurbished building around May 1, 2004.

From November 2003 to February 2007, two prime contractors performed operations and maintenance at RPC: Washington Group International/Black and Veatch from November 2003 to January 2006, and KBR - Middle East Region Office from February 2006 to February 2007. Section 34 of the statement of work associated with the respective contracts, awarded by U.S. Army Corps of Engineers in 2004 and 2006, stated, "All workmanship and materials shall conform with U.S. Army Technical Manual 5-683."¹⁷ The technical manual provided guidance for the maintenance of interior electrical systems of 600 volts and less, specifically referring to the National Electrical Code. Grounding requirements were clearly stated in Chapter 8 of Technical Manual 5-683, and work should have been performed to that standard under the contract.¹⁸

Replacement of the water tanks and pump on the roof of LSF-1 in June 2006 was performed by a subcontractor under the control of the KBR Middle East Region Office. Chapter 8 of Technical Manual 5-683 also states that, "Grounding systems should be serviced as needed to ensure continued compliance with electrical and safety codes, and to maintain overall reliability of the facility electrical system." The manual also defines equipment grounds.

An equipment ground pertains to the interconnection and connection to earth of all normally non-current carrying metal parts. This is done so that metal parts with which a person might come into contact are always at or near zero volts with respect to ground thereby protecting personnel from electric shock hazards....An equipment grounding conductor normally carries no current unless there is an insulation failure. In this case the fault current will flow back to the system source through the equipment grounding conductors to protect personnel from electrical shock.

¹⁷ Army Technical Manual 5-683, "Facilities Engineering Electrical Interior Facilities," November 30, 1995. This joint Army, Navy, and Air Force manual "provides guidance...in the maintenance of interior electrical systems of 600 volts and less."

¹⁸ The LOGCAP III contract did not invoke Technical Manual 5-683 for operations and maintenance work.

According to physical evidence, the pump was not grounded during installation. Regardless of the applicable electrical code, safe and proper installation required grounding.

In addition, contract W912ER-04-D-0005 included by reference Federal Acquisition Regulation clause 52.236-5, which addressed material and workmanship. The clause required, “...all work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work[place] any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.” Federal Acquisition Regulation clause 52.236-5 was also included in the LOGCAP III contract.

In February 2007, immediately following the period of performance of the U.S. Army Corps of Engineers contract, KBR LOGCAP technical inspections of the LSF documented a host of problems, specifically with grounding and bonding. Grounding deficiencies in LSF-1 should have been apparent during electrical work. Operations and maintenance contractors responded to numerous electrical system service order requests at the LSF, and repaired LSF-1 water heaters and pumps in July and November 2007. We found no indication that the contractor brought building grounding deficiencies to the attention of contracting officials.

Based on the totality of the evidence we reviewed, it is clear that Washington Group International/Black and Veatch and KBR did not maintain the electrical systems in the buildings in the RPC to either the National Electric Code or the British Standard, but “as is.” As outlined previously, the LOGCAP III contract did not explicitly state an electrical code for use during operations and maintenance, but did for refurbishment and construction. We believe KBR could have brought this shortcoming in the contract to the attention of the administrative contracting officer, as directed in the LOGCAP III Task Order 139 statement of work section 1.1.3. Section 1.1.3 of the task order states that, “In the case of inconsistencies, the contractor shall contact the administrative contracting officer (ACO), identify the inconsistency, and seek guidance.”

As discussed above in section B1 (page 25), prior to January 2008 the applicable electric code under LOGCAP III for the maintenance of Iraqi-constructed buildings was not explicit within the contract language. The Army Sustainment Command Procuring Contracting Officer, after discussions involving representatives from DCMA, TF SAFE, the Tri-Services Electrical Working Group, and KBR, signed the letter modification to the contract clarifying electrical standards on December 18, 2008. KBR acknowledged and agreed to the contents on the same day.

Issue C2: KBR Standard Operating Procedures

On January 2, 2008, KBR had three standard operating procedures in force relevant to SSG Maseth’s electrocution. The procedures were internal operating documents, approved by KBR.

- SOP No. 1N, “Facilities Maintenance,” signed on May 22, 2003.
- SOP No. 1J Revision #1, Service Order Desk,” signed on July 15, 2006.

- SOP No. 7AA Revision #2, “Electrical Services,” signed on September 12, 2007.

The documents provided basic scope, responsibilities, and procedures for KBR operations. KBR updated all three documents after SSG Maseth’s electrocution at the direction of DCMA.

Standard Operating Procedure No. 7AA, “Electrical Services,” in force in January 2008, contained no written standard procedures for the conduct of technical inspections or the disposition of results. This left it unclear whether KBR had consistent process requirements for technical inspection content, execution, inspector qualifications, focus areas, or disposition of results. Revision #5 to Standard Operating Procedure No. 7AA, September 19, 2008, updated the facility technical inspection form. The new form clearly addressed life, health, and safety impacts and highlighted facility electrical system grounding and bonding.

Issue C3: RPC Technical Inspections – Conduct, Content, Transmission of Results

Technical inspections established baseline building conditions and helped KBR estimate expected costs for operations and maintenance work. Even though the Army Procuring Contracting Officer Forward waived the requirement for technical inspections, KBR inspected the electrical systems of LSF buildings in February 2007. KBR repeated the technical inspections of the LSF electrical systems after the January 2008 electrocution. The inspections note numerous electrical deficiencies with varying serviceability condition codes (Appendix G).

The February 2007 inspection results for the LSF buildings showed several weaknesses with the KBR technical inspection process. First, the results showed numerous instances of missing or improper grounding. However, the reports did not result in KBR declaring the building uninhabitable or even unserviceable, and there were no indicators of any deficiencies related to life, health, or safety. The forms also lacked specificity. There was little or no data identifying rooms or locations within a building, or equipment serial numbers. Inspection results conducted in January 2008 had the same shortcomings.

Three other issues were evident from the February 2007 technical inspection results. First, more completed forms exist than there were buildings. This illustrates the facility naming and numbering problem, where the nomenclature for buildings would change over time. For example, the February 10, 2007 inspection of what was believed to be LSF-1 was labeled “LSF Office.” It complicated comprehension of what work was done on which building. Second, according to the dates of the electronic forms, the inspectors completed over 120 RPC buildings in two days. Third, the computer generated forms for LSF buildings were dated February 10, 2006. The KBR inspector testified that the inspection was conducted in 2007, and the date on the forms was a clerical error.

Analysis of KBR technical inspection results at the RPC in January 2008 illustrated further issues. First, according to the dates entered into the technical inspection forms, KBR inspectors completed all 126 technical inspections in less than a week. In fact, most of the forms are dated the same day, January 7, 2008. Second, the technical inspection forms for January 2008 for the 11 buildings in the LSF are almost identical to those completed in February 2007 (Appendix G).

However, the overall rating of LSF-1 was downgraded from “Serviceable – used, fair,” to “Serviceable – used, poor.”

On January 21, 2008, the Administrative Contracting Officer had to request release of the January 2008 RPC technical inspection results, which KBR delivered to the RPC mayor’s cell. There is evidence that the release of technical inspection results was not an RPC-specific issue. In October 2008, we conducted interviews at several installations in Iraq. At two sites, mayor’s cell personnel representing various units stated that KBR was reluctant to share technical inspection results or technical inspection-initiated service order requests with them. This contradicted the language of the June 2008 letter of technical direction that generated the technical inspections (Table 5, No. 4, p. 32). KBR was directed to, “... [in] coordination with each site’s mayor’s cell, submit service order requests for repairs and deficiencies ... identified during the execution of LOTD [letter of technical direction]... -1037.” Coordination with unit mayor’s cells was necessary to ensure a proper prioritization of service order requests based on unit requirements. Delays in sharing the information made it difficult if not impossible for units to provide input to the sequence of building repairs, understand the specifics of a building’s deficiency, and evaluate the effect of KBR repairs.

Issue C4: Contractor Records of Work Performed in LSF

Facility maintenance records were incomplete and lacked specificity necessary to determine specific actions performed by contractors. A local Iraqi contractor performed the initial renovations and improvements to LSF buildings starting in December 2003. Operations and maintenance at RPC under a U.S. contractor began in November 2003, thus it is likely that similar support began at LSF following construction. We were able to obtain incomplete RPC building maintenance records for the period beginning in December 2003, and the information captured generally improved over time. However, the records lacked precise building numbering and detail. Three examples illustrate the problem:

- We could not determine if the work performed by the Iraqi contractor starting in December 2003 included the installation of the entire electrical and plumbing system present in the building at the time of the January 2008 electrocution.
- It took interviews with four LSF-1 occupants and a KBR subcontracted plumber, review of KBR work order documents, and photographs of LSF-1 provided by former occupants to determine that the water tanks and pump on the roof that were in place at the time of the incident were likely installed during the first week of June 2006.
- In November 2007, SSG Maseth submitted a service order request for an “improperly cycling water pump.” KBR made repairs to a pressure tank and pressure switch, but we were unable to determine which tank and switch of the three in the building.

DCMA indicated KBR quality control personnel conducted 685 quality control inspections at the RPC, including the LSF, from January 2007 through March 2008. Of these inspections, 22 were for electrical services. Four electrical inspections conducted during the summer of 2007 uncovered electrical safety issues. DCMA further indicated that KBR issued internal corrective

action and performed follow up inspections. DCMA concluded that “...although traceability and thoroughness of the audits [inspections] was questionable in some of the documentation, there was evidence of some QAQC [quality assurance/quality control] oversight in the D9 RPC.”

Issue C5: KBR Electrical Work Force

As stated above (Issue B2, p. 27), the LOGCAP III contract was silent regarding the level of professional training and certification required for electricians. KBR Standard Operating Procedure No. 7AA, “Electrical Services,” September 12, 2007, was in force in January 2008. It called for “emergency repairs of damaged equipment or circuits” to be “accomplished by a skilled Electrician to minimize repair costs and downtime.” A TF SAFE subject matter expert opined that KBR electrical workers lacked knowledge of basic electrical concepts and procedures.

We interviewed two KBR electrical foremen and one KBR subcontractor (plumber) who worked at the RPC. Neither of the electrical foremen had ever possessed a license or certification. The workers said they had various levels of experience in Mexico, Bosnia, and the Philippines. They also stated that KBR provided little electrical training, and they were not closely supervised by managers while completing electrical work.

These three workers responded to service order requests initiated by personnel located at RPC, including LSF-1. After work was complete, unit points of contact, normally military personnel, were expected to sign service order requests indicating the problem in the building was repaired. After SSG Maseth’s electrocution, a TF SAFE subject matter expert opined that responding electricians should have more aggressively investigated the root cause of energized pipes in the building when responding to earlier service order requests.

One symptom of KBR workforce expertise was that it could take multiple service order requests and KBR responses for the same problem before deficiencies were “fixed.” In one extreme case, one occupant of the building named Sniper Hut testified that in late 2007, he had to submit multiple service order requests to get KBR to fix electrical voltage present in the building pipes. He stated he submitted at least four service order requests, including one after the January 2008 electrocution. KBR responded to each request, and in January 2008 conducted a detailed inspection of the electrical system in the Sniper Hut, but the electrical current was still present in the shower. He stated that KBR did not remedy the problem prior to him moving out of the building.

We concluded that the training and certification requirements for electrical workers did not keep pace with the complexity of the work demands as the Iraq theater of operations matured.

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D. Conclusions

We initially undertook this project to examine underlying causes of the January 2008 death of SSG Maseth, who was electrocuted while showering in his quarters in LSF-1 at RPC in Iraq. The Army investigation determined that SSG Maseth was electrocuted while showering when he came in contact with water pipes that had been energized when an ungrounded water pump failed. During our review, the U.S. Army Criminal Investigation Command reopened its investigation into SSG Maseth's death. That investigation is ongoing.

We concluded that multiple systems and organizations failed, leaving SSG Maseth and other US Service members exposed to unacceptable risk.

- Special Operations Task Force Commanders with responsibility for RPC did not ensure initial renovations to Legion Security Forces buildings were performed properly. Few capital improvements--such as rewiring of existing facilities used by U.S. personnel were undertaken. The initial renovations to LSF-1 performed by an Iraqi contractor were inadequate. Soldiers interviewed who experienced multiple deployments to RPC believed facility conditions deteriorated over time.
- Commanders and other key decision makers at RPC were not informed as part of the facility maintenance process of facility deficiencies impacting life, health, and safety, or of their repair. Officials responsible for the transfer of RPC operations and maintenance to LOGCAP III intended to reduce costs at a similar level of service, perpetuating unsafe electrical conditions.
- Service members who received electrical shocks or who were aware of electrical shocks did not always report the incidents. Service members residing in the facilities realized building electrical systems had problems, but considered occasional shocks as just another inconvenience associated with duty in Iraq. Commanders needed to make all Service members aware of the seriousness of electrical hazards.
- Joint doctrine, Army regulations, and U.S. Central Command policy for construction and facility operations did not specifically address the maintenance requirements posed by extended U.S. use of host nation-constructed permanent facilities in a non-stable environment. TF SAFE, established by MNF-I, had to implement measures to fill the gap. This is only a temporary solution.
- In 2007, the LOGCAP III contract, intended to augment military combat service support assets, was in its fifth option year. After SSG Maseth's electrocution, Army Sustainment Command modified the LOGCAP III statement of work.
 - Added explicit electrical standards for performance of operations and maintenance work. Prior to the electrocution, the Government relied on the general requirement to meet "Army regulatory standards" and the presumption that a contractor is obligated to provide quality and professional workmanship.
 - Added minimum requirements for contractor electrical workforce training and certification. Again, prior to the electrocution, the Government in good faith

relied on the contractor to provide a workforce that was qualified to perform electrical tasks assigned.

- Army Sustainment Command actions during contract negotiations transferring RPC facility operations and maintenance to LOGCAP III resulted in incomplete knowledge of facility conditions and assumption of undetermined risk by the Government. The Army Procuring Contracting Officer Forward completed the contract action in 19 days and waived the contract requirement for technical inspections of RPC buildings. There was no compelling reason to rush the action.
- KBR did not ground equipment during installation or report improperly grounded equipment identified during routine maintenance over an extended period of performance. Washington Group International/Black and Veatch and KBR performed electrical repairs that perpetuated electrical hazards and did not meet the “skillful and workmanlike manner” standard required by contract. We found no indication that KBR brought building grounding deficiencies to the attention of contracting officials.
- KBR installed the pump on the roof which contributed to the electrocution of SSG Maseth, as well as adjacent water tanks during the first week of June 2006. At that time, KBR was performing operations and maintenance at the RPC under a contract with the U.S. Army Corps of Engineers.
- KBR did not have standard operating procedures for the technical inspection of facilities. Standard Operating Procedure No. 7AA, “Electrical Services,” in force in January 2008, contained no written standard procedures for the conduct of technical inspections or the disposition of results. A September 18, 2008, revision updated the facility technical inspection form, addressing life, health, and safety impacts and highlighting facility electrical system grounding and bonding.
- KBR did not bring inconsistent contract specifications to the attention of the Administrative Contracting Officer as required by contract. The LOGCAP III contract did not specify an electrical code for use during operations and maintenance, but did for other types of facility work. KBR should have brought this shortcoming in the contract to the attention of the administrative contracting officer, as directed in the LOGCAP III Task Order 139 statement of work.
- Operations and maintenance contractor facility maintenance records were incomplete and lacked specificity, precluding the identification of systemic maintenance problems. Records lacked precise building numbering and detail, precluding accurate determination of personnel performing work, exact location, and equipment repaired or replaced.

After the electrocution of SSG Maseth, military commanders in Iraq and senior officials in Army Sustainment Command, Army Contracting Command, DCMA, and KBR took action to address the long-standing problem of electrical hazards in facilities in Iraq, including U.S.-inhabited, Iraqi-constructed buildings. Work continued as of publication of this report.

Appendix A Request & Announcement Letter



ACQUISITION AND
TECHNOLOGY

DEPUTY UNDER SECRETARY OF DEFENSE
3018 DEFENSE PENTAGON
WASHINGTON, DC 20301-3018

26 Feb 2008

MEMORANDUM FOR DOD IG

SUBJECT: Report of Congressional Inquiry and Request for DoD Investigative Support – Death
of SSG Ryan D. Maseth

I am writing to inform you that the Defense Contract Management Agency (DCMA) was recently notified of a letter, dated February 19, 2008, from Congressman Jason Altmire to the Secretary of Defense requesting an investigation into the regrettable death of Staff Sergeant (SSG) Ryan D. Maseth (Attached). SSG Maseth died on January 2, 2008, the result of electric shock suffered while he was showering in DoD-controlled living quarters at the Radwanayah Palace Complex, Baghdad, Iraq. The LOGCAP contract (DAAA09-02-D-0007) provided maintenance services to the living quarters at the time of the incident. We have not yet received a DoD tasking to respond to the inquiry, but we expect one soon.

The Congressman's letter alleges that DCMA was aware of an electrical safety hazard involving the shower facility used by SSG Maseth, and that through its inaction DCMA may have contributed to the soldier's death. The Congressman's allegations against DCMA stem from information contained in a January 21, 2008, memorandum for record (MFR) prepared by the U.S. Army Criminal Investigation Division (CID). The MFR accompanies the Congressman's letter.

As a result of this unfortunate loss of life and the serious allegations made against DCMA, we conducted a preliminary inquiry into the situation. Our DCMA Commander in Iraq reviewed documentation available to DCMA and believes his organization had no prior knowledge of electrical safety hazards related to the soldier's death. The Commander states that the CID MFR contains inaccurate statements with respect to DCMA and does not address the contracting actions of other organizations involved in administration of the LOGCAP contract.

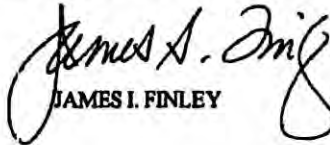
I recommend that the DoD Inspector General (IG) conduct a formal investigation into contracting matters related to the cause of this incident. An independent inquiry is necessary to ensure that the Congressman and his constituents receive the benefit of an outside, objective review of all pertinent facts related to the allegations against DCMA. Additionally, DCMA does not have the requisite authority to conduct an inquiry into other organization's involvement in this matter.

We stand prepared to cooperate fully in any future investigative efforts undertaken by the DoD IG or other appropriate authorities. We will delay communicating with the Congressman's office until we receive further guidance from your office or other DoD authority.



Additional documentation and information are available electronically from Paul Hadjiyane, Chief Counsel, DCMA International, tel. (703) 428-1812, e-mail: paul.hadjiyane@dcma.mil.

I am available to discuss this matter further at your convenience.


JAMES I. FINLEY

Attachment
As stated



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-4704

May 12, 2008

MEMORANDUM FOR DEPUTY UNDER SECRETARY OF DEFENSE FOR
ACQUISITION AND TECHNOLOGY
DEPUTY UNDER SECRETARY OF DEFENSE FOR
READINESS
INSPECTOR GENERAL, U.S. CENTRAL COMMAND

SUBJECT: Review of Contracting Actions Relating to the Electrocution Death of SSG Ryan Maseth (D2008-DIPOE2-0196.000)

We will begin field work for the subject review in May 2008. The Deputy Under Secretary of Defense for Acquisition and Technology requested this inquiry, in response to a letter from Congressman Jason Altmire. The overall objective is to review the relevant management, contracting, and maintenance actions prior and subsequent to the electrocution death of SSG Ryan Maseth on January 2, 2008. Specifically, we will:

- Determine management decisions preceding the event in question
- Assess contracting procedures for facility support to the Radwaniyah Palace Complex
- Identify criteria for and execution of facility inspections and maintenance

We plan to visit or contact the Defense Contract Management Agency, Army Sustainment Command, U.S. Army Corps of Engineers - Gulf Region Division, Army Criminal Investigative Division in Iraq, Army Combat Readiness Center, and other elements responsible for related installation management, contracting actions, and facility support. We will fully consider suggestions from management on additional or revised objectives.

Points of contact for the evaluation are Mr. George Marquardt at (703) 604-9159 (george.marquardt@dodig.mil) and Major Linda Moschelle at (703) 604-9129 (linda.moschelle@dodig.mil).

A handwritten signature in black ink, appearing to read "Wm Brem Morrison, III", is positioned above the printed name.

Wm Brem Morrison, III
Assistant Inspector General
for Inspections and Evaluations

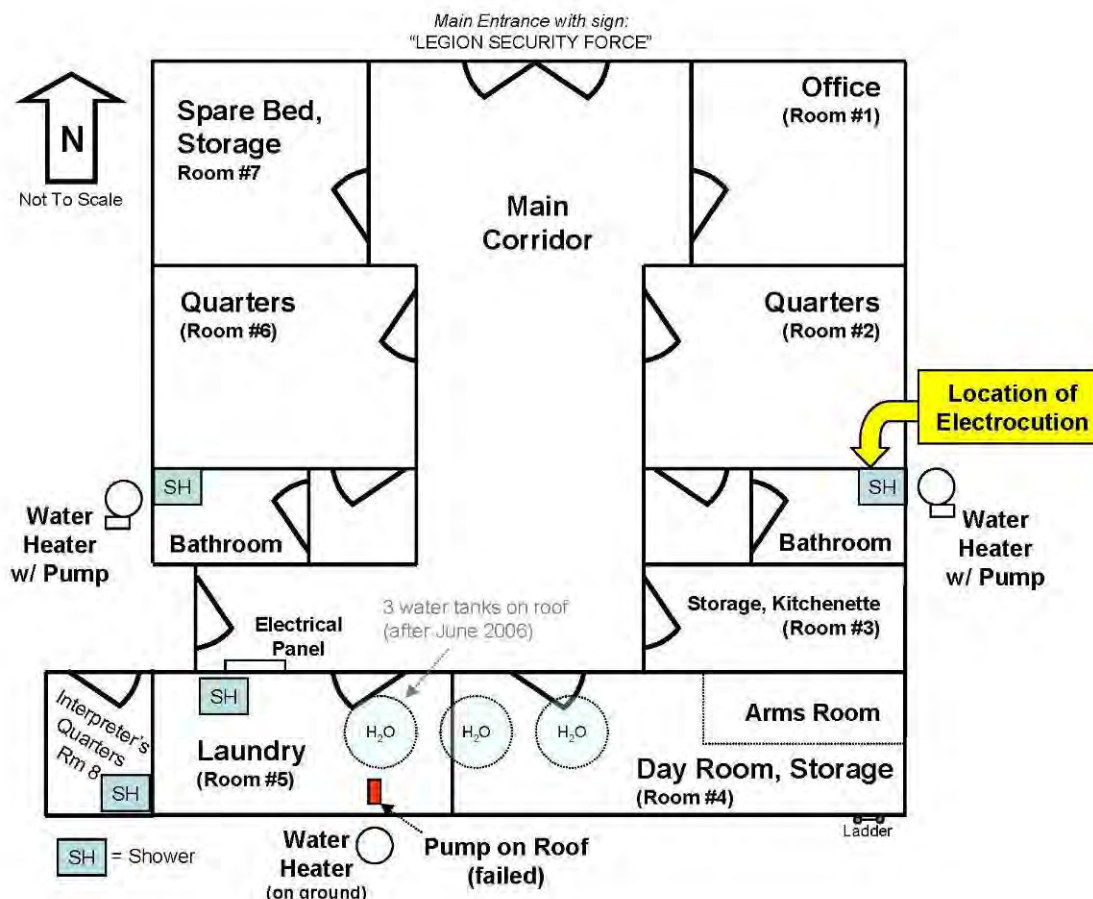
cc:
Defense Contract Management Agency
Army Sustainment Command
Inspector General, Department of the Army
Naval Inspector General
Inspector General, Department of the Air Force
U.S. Army Corps of Engineers
Army Criminal Investigative Division
Army Combat Readiness Center

Appendix B Summary of Electrocutions of Operation Iraqi Freedom Personnel From March 2003 to March 2009

No.	Rank	Date	Synopsis	Code
U.S. ARMY				
A1	CPT (O3)	18-Sep-03	Balad ~Soldier inadvertently grabbed power lines and was fatally injured when he tried to lift/move power lines while on top of Bradley vehicle.	PL
A2	SGT (E-5)	24-Dec-03	Kirkuk ~Electrocuted while running a communication cable in Kirkuk after he accidentally touched power line while trying to repair telephone wire.	PL
A3	PFC (E-3)	19-Mar-04	Babqubah ~ Electrocuted while running telephone wires. Metal ladder hit a power line.	PL
A4	SPC (E-4)	17-Apr-04	Samarra ~ Electrocuted while working on a generator at a Coalition base in Samarra, generator was not properly grounded.	G/E
A5	SPC (E-4)	8-May-04	Mosul ~ Died near Mosul in an electrical accident after he touched a metal pipe used to pump water into pool, and pump motor shorted out and was not properly grounded. No apparent KBR involvement. USACIDC investigation remains open.	G/E
A6	SPC (E-4)	18-May-04	Bayji ~ Died after an electrical accident while taking a shower. Water heater shorted out and was not grounded. KBR not involved. USACIDC investigation remains open.	G/E
A7	SGT (E-5)	7-Sep-05	Baghdad ~ Electrocuted while laying on aluminum pallets power washing the bottom of vehicles. Power washer was hooked directly to a generator with no circuit breakers or safety measures. Responsibility not clear. USACIDC investigation remains open.	G/E
A8	SPC (E-4)	12-Apr-07	Baghdad ~ Received an electrical shock while emplacing a concrete T-wall at COP Pathfinder and his crane hit a power line.	PL
A9	SGT (E-5)	22-Jun-07	Baghdad ~ Electrocuted while performing maintenance check on a generator and was hooking up equipment from power line to generator.	G/E
A10	SSG (E-6)	2-Jan-08	Baghdad ~ Electrocuted while in the shower as a result of an ungrounded water pump that shorted. USACIDC titled 2 KBR employees for criminal negligence. MNFI SJA determined insufficient for prosecution. USACIDC investigation remains open.	G/E
U.S. MARINE CORPS				
M1	LCPL (E-3)	2-Apr-03	An Nasiriyah ~ While manning a .50 caliber rifle on top of a 7-ton truck, he was electrocuted when the vehicle snagged low hanging power lines.	PL
M2	PFC (E-2)	13-May-04	Fallujah ~ Failed repair. Found on the ground clutching a box containing air conditioning power supply unit. No KBR involvement.	G/E
M3	SGT (E-5)	28-Jan-05	Camp A1 Taqaddum, Iraq ~ While assigned to a Route Recon Convoy that was conducting a search for unexploded ordnance, came in contact with a low hanging electrical wire and was electrocuted.	PL
M4	2LT (O-1)	4-Nov-06	Camp Rawah, Iraq ~ Assisting in improving a battle position on top of a roof structure when he fell approximately six feet from a cupola to the roof. Before or during his fall, he contacted power lines and was electrocuted.	PL
M5	LCPL (E-3)	16-Apr-07	Camp Al Asad, Iraq ~ While riding in the gun turret of a 7- Ton Truck, he was electrocuted after touching a low hanging electrical wire.	PL
U.S. NAVY				
N1	HM3 (E-4)	11-Sep-04	Camp Iskandariyah, Iraq ~ Found in an outdoor shower stall not breathing and without a pulse. A command inspection of the shower stalls deemed the showers dangerous for electrical shock. AFIP changed cause of death. NCIS investigation ongoing.	G/E
CONTRACTORS				
C1	Mr (Foreign National)	19-Jul-05	Baghdad ~ Individual was electrocuted when he grabbed the door knob to his room. The knob and door was electrified by an improperly installed window air conditioning unit installed by other occupants of his quarters.	G/E
C2	Mr (Foreign National)	24-Feb-08	Baghdad ~ While working at a construction site, swung a metal pipe that hit a power line and made him fall off a wall.	PL

LEGEND: PL = Individual killed by touching a power line G/E = Individual killed by improper grounding / faulty equipment

Appendix C LSF-1 Renovation and Repairs



LSF Occupation and Renovation

In December 2003, the Combined Joint Special Operations Task Force-Arabian Peninsula engineer staff began developing a project to renovate the existing buildings at the Legion Security Forces (LSF) compound to create living and working areas for the Iraqi Legion Security Force. The project included constructing a new entrance gate and a tower, renovating LSF-1 and other existing buildings, and “renovation of electrical, water and sewer lines.” The contract performance requirements stated, “The construction shall be executed in accordance with all applicable U.S. Standards. Materials available in the local market or in the regional economy will be utilized as required to meet the constraints of cost and schedule. When specified in this text, refer to U.S. Central Command’s ‘Sand Book’ for standards of construction.”

Testimony from the Special Operations engineer staff indicates they awarded the project to a local Iraqi contractor and then provided contract oversight. The staff officer indicated there were several projects in progress throughout the RPC, and it was very difficult to get Iraqi contractors to ground facilities because grounding was not part of the Iraqi construction code. Nevertheless, the Government accepted the work.

The LSF-1 renovation project included installing windows, doors, electrical fixtures, plumbing fixtures, and at least one water pump, heater, and tank for the bathroom in room 2. The main circuit breaker for LSF-1 is shown in the photograph to the right. We believe the panel in use at the time of the electrocution was installed during this renovation. We found no work orders or testimony indicating the panel was replaced. Two occupants who lived in LSF-1 in early 2006 recognized the panel as it appears in the photo to the right.



Main Circuit Breaker Panel, LSF-1
(From Army photographs taken on January 2, 2008)

Evidence suggests the black substance on the panel was tar used to repair the roof. Electricians who have examined the actual panel or photographs stated the tar should not have any impact as the circuit breakers were designed to function no matter the position of the external switch.

Electricians also pointed out that the panel was not grounded. Based on testimony provided reference the night of the electrocution, the circuit supplying power to the pump that failed went through this panel.

The first U.S. soldier who lived in the building stated there was “a big acceptance ceremony” to celebrate completion of the LSF project on May 1, 2004, and he moved in to the building shortly thereafter. His sleeping quarters were in room 2, and rooms 1 and 6 were used as offices. This soldier was the only occupant until October 2004 when an interpreter moved into room 6.

Documents showed the installation of a new shower, water heater, and water pump in November 2004. A work order dated November 17 states, “Install Water heater and Shower outlet in other room at LSF – Gate 1.” Then on November 24, a work order states “Install Water Pump in Bathroom LSF – Main Office.” According to former occupants, an Iraqi soldier moved into room 8 in November 2004, and the first US soldier occupied room 8 in October 2005. Room 7 gained its first occupant in February 2005.

Occupant testimony and photographs indicate that by early 2006, LSF-1 had three water heaters on the ground outside room 2, 5, and 6, two water pumps on the ground outside rooms 2 and 6, and one water pump on the roof.

In May 2006 KBR replaced the water tanks and water pump on the roof of LSF-1. A building occupant recalled submitting a work order to replace the water tanks. Service Order Request D-1388, dated 26 May 2006, included the problem description, “Roof top storage unit leaking, causing standing water on roof and drainage from roof, flooding areas, causing mud and standing water buildup.” The Daily Supervisor Report for May 29, 2006 summarized the work done, “LSF Dagger, WO [Work Order] D-1388, Install the water tank and motor pump, and remove (3)

tanks and [connect] water main line and electrical [float switch] to outlet up to pressure [switch].” Note that during this time period, the LSF compound was designated “LSF-Dagger.”

The plumber’s name was on the work crew list for that day. The plumber testified he recalled replacing the three water tanks and the pump on the roof. He stated that when he installed the pump, he did only the plumbing work; an electrician would have hooked up the power supply for the pump.

A different occupant of the building remembered that the first replacement pump did not work properly and had to be replaced. A service order request dated June 5, 2006, supported his report, stating the “Water pump that was worked on this week is leaking a lot. Need seal between motor and pump.” The building occupant also stated that the plumber who did the first replacement also did the second. A Material Received Record shows receipt of a water pump by the same plumber mentioned above, and the Daily Supervisor Report for June 7, 2006, lists “Replace the one (1) motor pump and check pressure.” We believe this pump is the one that failed and caused SSG Maseth’s death. An engineering analysis of the pump after the incident determined it was not grounded.

LSF Electrical and Plumbing System Maintenance Issues

Documents show the water pumps at LSF-1 had frequent problems during the 22 months of occupancy under the first operations and maintenance contractor, Washington Group International/Black and Veatch. On August 2, 2004, the first occupant submitted a work order, “Fix Problem with Water Pump at the LSF Office \ Gate 1.” The pump was repaired on August 2, but a second work order on August 5 stated “Repair/replace water pump for LSF Building Gate 1” and the pump was replaced. It is not known which pump had the problem. We found six additional work order requests to fix or replace water pumps in LSF-1 between December 2004 and February 2006. Of these eight work orders, only one specifically stated a problem with a pump on the roof of the building. The work order dated May 16, 2005, stated, “Water pump does not work. Float valve in the rooftop tank broken.” From the list of materials, it appears the contractor replaced the pump and its pressure tank.

There were at least ten requests to repair or replace water pumps at the LSF compound during the period of performance of the KBR Middle East Region Office. Work order documents were not always specific as to which facility in the LSF, but it is clear that five of the requests were for LSF-1. We found no indication from these work orders or testimony that the pump on the roof was repaired or replaced other than the work done in June 2006, described above.

Water pump problems at the LSF continued into the KBR period of performance under LOGCAP III. There are three work orders for July 8, 2007. The first one stated, “Water pump on top of bldg leaking thru roof” and was assigned to the plumbing shop. The repair was “Replace pressure switch.” The location was “LSF – Terp Room.” We were unable to confirm that the building was LSF-1, but at that time an interpreter lived in room 8 of LSF-1. We assume “Terp” was the abbreviation used for “interpreter.” This repair did not include replacing the water pump on the roof.

The second and third work orders were responses to another deficiency in LSF-1. The second work order stated “Pipes (shower & sink) have voltage – get shocked in shower and sink” and was assigned to the electrical shop. An electrician responded and recorded, “Found problem to be a faulty pressure switch on east side of building. Plumber needs to repair.” This generated the third work order which was assigned to the plumbing shop and had two titles, “LSF – pipes have voltage, get shocked in shower” and “LSF – busted pressure switch.” The worker recorded the repair as, “Replace pressure switch and water pump.” The location for the repair was recorded on the second work order as the “east side of building,” which corresponded to the bathroom of the soldier who submitted the work order for the shocks (Room #2 on the building diagram). We conclude that the pump on the ground by that bathroom was the one replaced.

SSG Maseth submitted a work order relating to a water pump malfunction on November 2, 2007. It stated, “The pump is pulsating badly-LSF Advisor Bldg.” It is not known which of three pumps located at LSF-1 was pulsating. The repair was, “Replaced pressure tank; adjusted pressure switch.”

Water heater failures were also an ongoing issue. The first documented water heater problem appeared in a work order dated October 28, 2004, “Check & fix the Hot Water Heater at LSF Bldg. Gate 1.” It appears the water heater was replaced two days later, but on November 2 and 3, 2004, there were two more work orders requesting repair of at least two water heaters in the building. Documents show two water heaters were replaced. Water heaters at LSF-1 also demonstrated repeated problems, resulting in at least 12 work orders repairing or replacing water heaters between August 2005 and October 2007.

Appendix D Observation Letter to MNF-I



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-4704

NOV 14 2008

MEMORANDUM FOR COMMANDER, MULTI-NATIONAL FORCE IRAQ

SUBJECT: DoD Inspector General Observations Concerning Electrocutions in Iraq Resulting
From the Site Visit to Iraq (Project D2008-DIP0E2-0196)

A four person team from the Office of the Deputy Inspector General, Policy and Oversight, visited the Multi-National Force - Iraq (MNF-I) from September 30 to October 8, 2008. The field visit was part of the Inspector General's review of: (1) the management, contracting, and maintenance actions relating to the January 2008 electrocution death of SSG Ryan Maseth; and (2) command actions, investigation case files, and safety mishap investigations of eight additional electrocution deaths in Iraq.

The outstanding support provided by MNF-I enabled the IG team to visit eight locations and interview approximately 150 individuals throughout its area of operations. The IG team met with Commanders, Inspectors General, Forward Operating Base "mayor cell" personnel, facility managers, and hosted sensing sessions at each location. During their time in Baghdad, the team interviewed key MNF-I, Defense Contract Management Agency, and contractor personnel.

During the site visit, the IG team made three preliminary observations and proposes the following recommendations for your consideration and action:

Observation 1: Theater-wide Definition of Safe Electrical Systems

During our visit, the Command was struggling to define a safe electrical standard for facilities in Iraq where Coalition forces live and work. Multiple standards are available, and the unique circumstances and variety of facilities in Iraq complicate the issue. At the time of our visit, the master electricians representing the Government and contractor Kellogg, Brown, and Root could not agree if the repairs of the electrical system made to Legion Security Forces Building No. 1 (the January 2008 incident site) were adequate to make the building safe. Going forward, parties inspecting facilities and performing maintenance and repairs need consistent technical guidance that provides a reasonable interpretation of a safe electrical code. The Command must be able to adjudicate among viable options to minimize confusion and limit disagreements among "experts" that hinder hazard identification and delay corrections.

Recommendation 1: MNF-I should appoint an individual who has the qualifications and authority to validate electrical code standards, approve deviations from the standards, and adjudicate disagreements in interpretations.

Observation 2: Managing Facility Life, Health, and Safety Deficiencies

Commanders and key decision makers were not monitoring the completion of facility life, health, and safety (LHS) deficiencies. LHS service order requests generally receive a higher priority for attention, but are processed as a normal request. “Mayor cells” see the initial service order requests and then aggregate totals showing completion status. The contractor maintains details of what was fixed, when, and how. Also, garrison command personnel reported that technical inspection documentation contained insufficient detail to determine, track, and verify exactly what needed repair. In order to assess risk to their troops, Commanders and key decision makers need visibility of facility LHS deficiencies and a feedback method notifying them of specific actions taken in response to LHS service order requests. Once the information is available, the weekly “mayor cell” meetings provide an existing method of dissemination.

Recommendation 2: MNF-I should establish a process that provides Commanders and key decision makers the status of all facility life, safety, or health deficiencies on a regular basis.

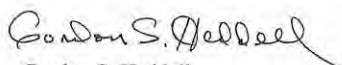
Observation 3: Garrison Command Facility LHS Standards Enforcement

The Victory Base Complex (VBC) Garrison Command area of responsibility included 12 organizations with “mayor cells.” While tasked to manage and maintain all VBC facilities and infrastructure, the garrison commander had a formal command and control relationship with only five “mayor cells.” The commander’s limited authority over units and organizations represented by the other seven “mayor cells” hinders master planning, deters unit access to garrison staff capabilities, and can delay effective implementation of command-directed LHS requirements.

Recommendation 3: MNF-I should ensure the Victory Base Complex Garrison Command has sufficient authority over units and other organizations occupying facilities within the garrison area of responsibility to enforce command-established, facility life, health, and safety standards.

MG Timothy McHale and his TF SAFE group briefed the IG team on their plan to address theater-wide electrical and fire safety challenges. The plan reflects the considerable level of effort and resources MNF-I is applying to the problem. While visiting field locations, the IG team observed significant activity designed to enhance electrical safety awareness. The Command should establish safe electrical standards and continue to aggressively execute the TF SAFE plan to create a safer living and working environment for Coalition forces.

A response within 15 days would be appreciated so that we may incorporate your comments into our report. Thank you again for your support of our visit and cooperation in these matters. My point of contact is Mr. James Pavlik, Assistant IG for Investigative Policy and Oversight, who can be reached at (703) 604-8804 (DSN: 664-8804) or at james.pavlik@dodig.mil.


Gordon S. Heddell
Acting

cc: USCENTCOM

Appendix E LOGCAP III Task Order 139 Facilities Maintenance Levels

The U.S. Army Sustainment Command LOGCAP Support Unit created the “A-B-C Level” approach to facility operations and maintenance in LOGCAP III Task Order 139. The LOGCAP Support Unit briefed numerous forward operating bases in 2006, soliciting input prior to finalizing contract language. Responsible officials from U.S. Army Sustainment Command, MNF-I, and MNC-I approved the change prior to inclusion into Appendix F of LOGCAP III Task Order 139 effective October 1, 2006.

APPENDIX F – FACILITIES OPERATIONS & MAINTENANCE MATRIX

F.1. Appendix F applies to all facilities (such as hard structure buildings, guard towers, etc.) located on military base camps. The appendix is subdivided into three Levels: A, B and C.

F.1.1. Determination for the total number of buildings located on a particular facility is a joint effort between the Mayoral Cell and the contractor.

F.1.2. Prioritization of facility levels (A, B and C) is the responsibility of the Mayoral Cell.

F.2. There are two levels of maintenance that the contractor shall provide: Level A, Full Maintenance and Level B, Limited Maintenance. Facilities prioritized into Level C receive no contractor maintenance.

F.2.1. Level A, Full Maintenance.

F.2.1.1. The contractor shall provide maintenance on any items pertaining to these facilities that can be repaired (such as plumbing, electrical, HVAC [heating, ventilation, air conditioning], roofs, floors, windows, doors, walls and grounds around the facilities) and provide preventative maintenance (such as change out of filters, HVAC cleaning, etc).

F.2.1.2. The Government will initiate a service request for all maintenance repairs pertaining to Level A.

F.2.1.3. The contractor shall provide the Mayoral Cell with a yearly inspection and punch list for all facilities prioritized as Level A.

F.2.1.4. The contractor shall initiate repairs using the Mayoral Cell’s priority system that consists of three levels: P1, P2 and P3.

F.2.1.4.1. Level P1, emergency repairs. The contractor shall respond within (2) two hours of the request. Emergency repairs are situations that affect life, safety and force protection.

F.2.1.4.2. Level P2, urgent repairs less than 24 hours. The contractor shall respond within 24 hours of the request. Urgent repairs are non-life threatening situations such as water leak vs. water break, generator running out of fuel (except for critical facilities as identified by Base Camp Mayor), etc.

F.2.1.4.3. Level P3, routine repairs between 24 hours through 14 days. The contractor shall respond within 24 hours. Routine repairs include replacing light bulbs, repairing door hinges, door repair, etc.

F.2.2. Level B: Limited Maintenance.

F.2.2.1. Limited Maintenance does not include inspections, preventative maintenance and upgrades.

F.2.2.2. Upon receipt of service request, the contractor shall conduct an assessment to determine feasibility of repair or replacement of existing items. The assessment shall be provided to the Mayoral Cell.

F.2.2.2.1. If the assessment determines repair or replacement is warranted, the contractor shall repair or replace existing items only.

F.2.2.2.2. Repair or replacement of existing items is defined as items, which currently exist in the facility, and are within current funding streams.

F.2.2.2.3. If the assessment exceeds the scope of repair or replacement; the contractor shall return the service request to the Mayoral Cell for disposition.

F.2.2.3. Any repairs or replacement that need to be done on the facility will be initiated with a service request by the customer.

F.2.2.4. Repairs on emergency items (i.e. No power or no AC [air conditioning] in the summer) will be initiated within two hours of the request. Normal repairs initiated within 24 hours of the request.

F.2.3. Level C, No Maintenance only spot repairs.

F.2.3.1. Level C requests are for new work.

F.3. Facility determination and prioritization should be reviewed jointly between the Mayoral Cell and the contractor

F.4. Preventive Maintenance:

F.4.1. A Category. Inspection should be conducted every 60 days, but can be modified by the base camp mayor for more or less frequent inspections on an individual basis. The purpose of these inspections is for safety and to save the government money by identifying deficiencies while they are still small and easy to fix. Inspection should include but is not limited to the following:

F.4.1.1. Electrical. Check for damage or tampering with switches, outlets, junction boxes, control panels, circuit breakers, fuses, grounding rods, and overloading.

F.4.1.2. Plumbing. Check for leaks, drips, corrosion in shower heads, shower curtains, water pressure, hot water temperature, and evidence of water damage to floors and walls.

F.4.1.3. Exterior. Check roof for leaks, deterioration, lost shingles, bubbles, and animal damage. Check walls for holes and chipping paint. Check windows for broken glass and ease of operation. Check doors for squeaks, ease of movement, and working locks.

F.4.1.4. Interior. Check linoleum for cracks and tears. Check doors for squeaks, ease of movement, and working locks. Check walls for cracks, holes, and chipping paint. Check ceiling for evidence of leaks.

F.4.1.5. HVAC. Check cooling and heating for proper operation. Check filters and clean or replace as required for proper operations and health/safety standards.

F.4.1.6. Lighting. Check light fixtures and replace as required.

F.4.1.7. Power Generation. Check based on Annex G and MSOW [modified statement of work].

F.4.2. B Category. Contractor shall provide service support either by service order or ACL [administrative contracting officer change letter]. Upkeep and inspection not part of services. Power generation: check based on Annex G and MSOW.

F.4.3. C Category. Contractor shall only provide service support as new work under an ACL. Power generation: check based on Annex G and MSOW.

Appendix F RPC Shock History

List of Work Orders (WO) for Shocks at the RPC			
WO Number	Date	Building Name	Description
Washington International (Nov 03 - Apr 06) -- 4 incidents total; none at the LSF compound			
D221	20-Mar-04	RSOI Mayor Bldg	Shocked in shower - Check water heater
D234	23-Mar-04	RSOI Mayor Bldg	Still getting shocked by shower faucets
G127	07-Apr-04	Tower 2 CP	Received electric shock when turning off shower
D483	06-May-04	Corps of Engr Trailer	Getting shocked in Shower. Check electrical system for shorts.
KBR-MERO (Apr 06 - Feb 07) -- 8 incidents total; 3 at LSF, and 2 in LSF-1			
D1682	15-Jun-06	LSF Amer HQ *	Please ground our water heater; people getting shocked while showering
D3068	17-Sep-06	Between the Walls	Shocked by shower faucet and floor when water is running.
F3854	12-Nov-06	RSOI	Electrical shock on faucets. Check grounding on the pump.
D4034	25-Nov-06	LSF Gate 1	Check ground for shock hazard.
F4236	11-Dec-06	Sniper Hut	Left side shower produces shock.
F4270	14-Dec-06	Bldg 7	Repair exposed wire in shower - get shocked when used
D4657	09-Jan-07	LSF	Repair electrical shock in bathroom
G5244	21-Feb-07	Tower 2	Repair grounded wiring; Residents shocked when using shower.
KBR-LOGCAP (Feb 07- 2 Jan 08) -- 9 incidents total; 2 in LSF-1			
575486	05-Mar-07	Tower 2	Shower on 2nd floor shocks people
860987	12-May-07	Tower 2	Shower shocks from mall
1208111	08-Jul-07	LSF *	Pipes have voltage, get shocked in shower (electrical)
1208997	08-Jul-07	LSF *	Pipes have voltage, get shocked in shower (plumbing)
1212525	09-Jul-07	Bldg 1 Dagger	Electricity felt at shower faucet
1438833	15-Aug-07	Ferguson Carwash	Pressure washer shocking personnel
1747841	27-Sep-07	RSOI Bldg 10	Troubleshoot and correct source of shock hazard in bathroom of residence
2467210	23-Nov-07	RSOI Bldg 4	Shock hazard
2467126	23-Nov-07	RSOI Bldg 10	Shock hazard
n/a	02-Jan-08	LSF-1	SSG Maseth
KBR-LOGCAP post incident (Jan - Mar 08) -- 9 incidents; 3 were at the LSF compound			
3050838	05-Jan-08	Sniper Hut	Electrical current in and around shower. Have been shocked several times.
3283298	23-Jan-08	LSF	Soldier being shocked, check ground for panel, water heater and pump
3284430	22-Jan-08	LSF Bldg 6	Soldiers being shocked in showers / ground water heaters and water pump.
3284453	22-Jan-08	LSF Bldg 5	Soldiers being shocked in showers / ground water heaters and water pump.
3391941	02-Feb-08	Green Bldg 6	Voltage present on water pipes / ground water pumps and water heaters
3764364	23-Feb-08	Sniper Hut	Soldiers saying getting shocked in shower
3842649	25-Feb-08	RSOI C2	Shower and bathroom faucet shocking soldiers
3858389	27-Feb-08	VIP (Engr Island)	Voltage running off water pump. Water from shower and faucet is shocking people.
3973812	05-Mar-08	RSOI Bldg C5	After changing the water tank, the whole house has an electrical charge (walls, faucets.)
* Testimony confirmed these incidents occurred in LSF-1			
KEY: Blue = LSF Compound Purple = LSF-1			

We interviewed 16 occupants of LSF 1; 8 of them said they were shocked on at least 16 occasions before SSG Maseth was killed. The shocks happened in four rooms that had showers and sinks. The time period spanned four unit rotations and three different operations and maintenance contractors.

LSF #1 Occupant and Shock History									
		1	2	Room 2	Room 6	Room 7	Room 8		
2008 Jan 2007 Dec Nov Oct Sep Aug Jul Jun May Apr Mar Feb Jan	↑	Defense Contract Mgmt Agency	KBR - LOGCAP	SSG Maseth		see note 3			
					5th SFG	5th SFG			
				3X shower & sink 2X in shower		Transients			
					10th SFG	10th SFG		Interpreter	
							2X in shower		
							1X in sink		
				1X in shower 1X in laundry rm	1X in laundry rm 5th SFG	5th SFG	5th SFG		
					1X in shower				
						1X in laundry rm	2X+ in shower		
					19th SFG	19th SFG	19th SFG		
					1X in laundry rm				
							5th SFG		
2006 Dec Nov Oct Sep Aug Jul Jun May Apr Mar Feb Jan	↑	US Army Corps of Engineers	KBR - MERO						
2005 Dec Nov Oct Sep Aug Jul Jun May Apr Mar Feb Jan	↑	US Army Corps of Engineers	Washington Int'l / Black and Veatch						
2005 Dec Nov Oct Sep Aug Jul Jun May	↑	US Army Corps of Engineers	Washington Int'l / Black and Veatch						
2004 Dec Nov Oct Sep Aug Jul Jun May	↑	US Army Corps of Engineers	Washington Int'l / Black and Veatch						

Key: 5th SFG, out of Ft Campbell, KY
 10th SFG, out of Ft Carson, CO
 19th SFG, Army National Guard, WV
 Not US Military

NOTES:
 1 Contract administrator
 2 Contractor
 3 Room 7 had no bathroom. Occupants used the laundry room shower and sink.

Appendix G Summary of LSF Technical Inspection Results

This figure summarizes the results of the KBR-conducted technical inspections of the electrical systems of the Legion Security Force buildings. KBR performed the first inspections in February 2007 as part of the contract action adding operation and maintenance support for the Radwaniyah Palace Complex to the LOGCAP III contract.

KBR conducted the second inspection in January 2008 at the direction of DCMA following the electrocution in building LSF-1. The figure illustrates two points. First, KBR inspectors recognized that grounding was a systemic problem. Second, the results of the January 2008 inspection were virtually identical to the February 2007 results.

February 10, 2007 Technical Inspection Results										
Inspector: Purcell Matthews	LSF Badge Office 1	LSF Badge Office 2	LSF Barracks 1 & 2	LSF Barracks 1 Truck Drivers	LSF Barracks 2 Truck Drivers	LSF Barracks 3 Truck Drivers	LSF Guard Shack	LSF Mess Hall	LSF Office	LSF Training Center 1
Main Distribution Panel; Panel is missing cable glands for termination, panel are <u>not grounded</u> , No dead man front or panels cover			X	X	X	X	X	X	X	X
Secondary Feeder Panel; Panel is missing cable glands for termination, panel are <u>not grounded</u> , No dead man front	X	X	X					X		X
Secondary Feeder Wire Circuits 2.5MM; Wire is not sized properly for the main breakers, incorrect thermal insulation coating on the wire does not meet BS or NEC 4X2.5MM <u>no separate ground</u> supplied to ground panel	X	X	X	X	X	X	X	X	X	X
220 V Water Heater Disconnect; No disconnect present direct wire to the wall outlet, tank <u>not grounded</u>	X	X	X	X	X	X	X	X	X	X
Main Feeder Wire 25MM; Wire is not sized properly for the main breakers, incorrect thermal insulation coating on the wire does not meet BS or NEC 4X25MM <u>no separate ground</u> supplied to ground panel			X	X ²	X	X	X	X		X
January 7, 2008 Technical Inspection Results										
Inspectors: David Nutt and Mirsad Husic	LSF Badge Office 1	LSF Badge Office 2	LSF Barracks 1 & 2	LSF Barracks 1 Truck Drivers	LSF Barracks 2 Truck Drivers	LSF Barracks 3 Truck Drivers	LSF Guard Shack	LSF Mess Hall	LSF Office	LSF Training Center 1
Main Distribution Panel; Panel is missing cable glands for termination, panel are <u>not grounded</u> , No dead man front or panels cover			X	X	X	X	X	X	X	X
Secondary Feeder Panel; Panel is missing cable glands for termination, panel are <u>not grounded</u> , No dead man front	X	X	X ¹					X		X
Secondary Feeder Wire Circuits 2.5MM; Wire is not sized properly for the main breakers, incorrect thermal insulation coating on the wire does not meet BS or NEC 4X2.5MM <u>no separate ground</u> supplied to ground panel	X	X	X	X	X	X	X	X	X	X
220 V Water Heater Disconnect; No disconnect present direct wire to the wall outlet, tank <u>not grounded</u>	X	X	X	X	X	X	X	X	X	X
Main Feeder Wire 25MM; Wire is not sized properly for the main breakers, incorrect thermal insulation coating on the wire does not meet BS or NEC 4X25MM <u>no separate ground</u> supplied to ground panel			X	X ²	X	X	X	X		X

^[1] No secondary panel; bldg 2 will have to be rewired.

^[2] TI does not state "wire is not sized properly for the main breakers".

Appendix H LOGCAP III Organizational Responsibilities

Program Description

The Logistics Civil Augmentation Program is an initiative by the United States Army to pre-plan during peacetime for the use of civilian contractors to perform selected services in wartime and other contingencies to augment U.S. Forces in support of DoD missions. The purpose of the contract was to provide the Military Services capability to leverage corporate assets to augment current and programmed combat service support.

As of March 2007, LOGCAP operations for the Global War on Terrorism directly supported over 250,000 Service members in nine countries and provided a full spectrum of logistics services, to include, but not limited to: base camp operations and maintenance, facilities management, theater transportation, fuel distribution, power generation, water and ice production, laundry and bath services, airfield operations, supply operations, detainee camp construction, postal services, vehicle maintenance, seaport of debarkation/airport of debarkation infrastructure and firefighting.

Background

The LOGCAP III contract was awarded on December 14, 2001 to KBR as a result of a competitive best value source selection. It was an indefinite delivery/indefinite quantity service contract, with a performance period consisting of one base year and nine option years. At the time of the addition of RPC in February 2007, the contract operated under its fifth option year. Individual task orders against the indefinite delivery/indefinite quantity contract were awarded and funded to facilitate provision of requisite services to specific areas of operation against specified requirements.

Task Order 139 provided theater transportation mission support, corps logistics service support, base camp services, accommodations and life support services, and selected Echelons Above Corps/Echelons Above Division Combat Support/Combat Service Support functions to MNF-Iraq and MNC-I at various locations in Iraq. KBR was tasked to provide all resources and management necessary to assume the mission in accordance with Basic Contract No. DAAA09-02-D-0007. The task order period of performance was September 1, 2006 through August 31, 2008.

Organizational Responsibilities

In August 2006, U.S. Army Sustainment Command¹⁹ delegated Federal Acquisition Regulation Part 42 responsibilities for contract management on the LOGCAP III contract to DCMA. Administration was delegated to DCMA Soldier Systems & Civil Augmentation Program - Phoenix and administration was performed by the DCMA Soldier Systems & Civil

¹⁹ At the time of the delegation of authority, the U.S. Army Sustainment Command was called the U.S. Army Field Support Command.

Augmentation Program - Houston Group. DCMA Soldier Systems & Civil Augmentation Program - Phoenix was subordinate to DCMA Ground Systems & Munitions Division headquartered in Arlington Heights, Illinois. DCMA Soldier Systems & Civil Augmentation Program - Houston Group served as the primary interface to the U.S. Army Contracting Command-Rock Island Contracting Center customer on contract related issues, provided systems cognizance and performed reach back functions on the delegated contracts. The DCMA International Division, headquartered in Alexandria, Virginia, had responsibility for day to day management of the contract through its deployed DCMA Iraq/Afghanistan office in Baghdad, Iraq.

Warranted DCMA Iraq/Afghanistan administrative contracting officers routinely issued LOGCAP administrative contracting officer change letters and letters of technical direction to administer the contract. Additionally, DCMA Iraq/Afghanistan provided quality assurance and property management functions under LOGCAP. This mission was accomplished by junior grade officers (O-3 to O-5) and federal civilians.

The LOGCAP Support Unit was a forward deployed Army Reserve unit headquartered in Ft. Belvoir, VA. It was staffed mainly by Army Reserve soldiers in various job series. This unit complemented the DCMA team and functioned as an interface to MNF-I and MNC-I for support requirements in a fluid deployed environment. The LOGCAP Army Procuring Contracting Officer Forward was a warranted procuring contracting officer who managed various LOGCAP Support Officers co-located with DCMA at various locations throughout Iraq. These officers (normally grades O-3 to O-5) were not warranted contracting officers.

Appendix I Acronyms

The following is a list of the acronyms used in this report:

Acronym	Description
DCMA	Defense Contract Management Agency
IG	Inspector General
KBR	Kellogg Brown and Root, Inc.
LOGCAP	Logistics Civil Augmentation Program
LSF	Legion Security Forces
MNC-I	Multi-National Corps-Iraq
MNF-I	Multi-National Force-Iraq
RPC	Radwaniyah Palace Complex
SSG	Staff Sergeant
TF SAFE	Task Force for Safety Actions for Fire and Electricity

Appendix J Distribution List

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Under Secretary of Defense for Acquisitions, Technology and Logistics
Deputy Under Secretary of Defense for Acquisitions and Technology*
Director, Defense Contract Management Agency*

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Commander, U.S. Special Operations Command
Commander, U.S. Central Command*
Commander, Multi-National Force-Iraq*
Commander, Multi-National Corps-Iraq*

Joint Staff

Director, Joint Staff*

Department of the Army

Secretary of the Army
Commander, Army Materiel Command
Executive Director, Army Contracting Command*
Assistant Chief of Staff, Installations Management*
Department of the Army, Inspector General
Chief of Engineers, U.S. Army Corps of Engineers
Army Auditor General*
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Department of the Navy

Secretary of the Navy
Naval Inspector General

Department of the Air Force

Secretary of the Air Force
Secretary of the Air Force, Inspector General

Congressional Committees

Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Homeland Security and Governmental Affairs
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Oversight and Government Reform

- Denotes recipient of the draft report.

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General Information

Forward questions or comments concerning this report and other activities conducted by the Inspections & Evaluations Directorate to:

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